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ABSTRACT

This publication contains papers, presented at a conference about physical activities for the exceptional individual, concerning: (1) student interest/motivation; (2) swimming; (3) games; (4) wheelchairs; (5) movement education; (6) physical stress and bone growth; (7) parent involvement; (8) meningomyelocele; (9) blind athletes; (10) Project Interdependence; (11) language development through movement; (12) adapted physical education; (13) brainstorming and creative teaching; (14) secondary school physical education; (15) high risk youth; (16) behavior management; (17) peer teaching; (18) horseback riding; (19) quadriplegics; (20) therapist role; (21) psychological conditions; (22) therapeutic exercise; (23) cardiovascular fitness; (24) individualized instruction; (25) teaching aides and interns; (26) outdoor education; (27) acupressure; (28) recreation and leisure; and (29) play. The papers describe programs, procedures, methods, and tips for working with emotionally, learning, and/or physically disabled elementary and secondary school students. (CJ)

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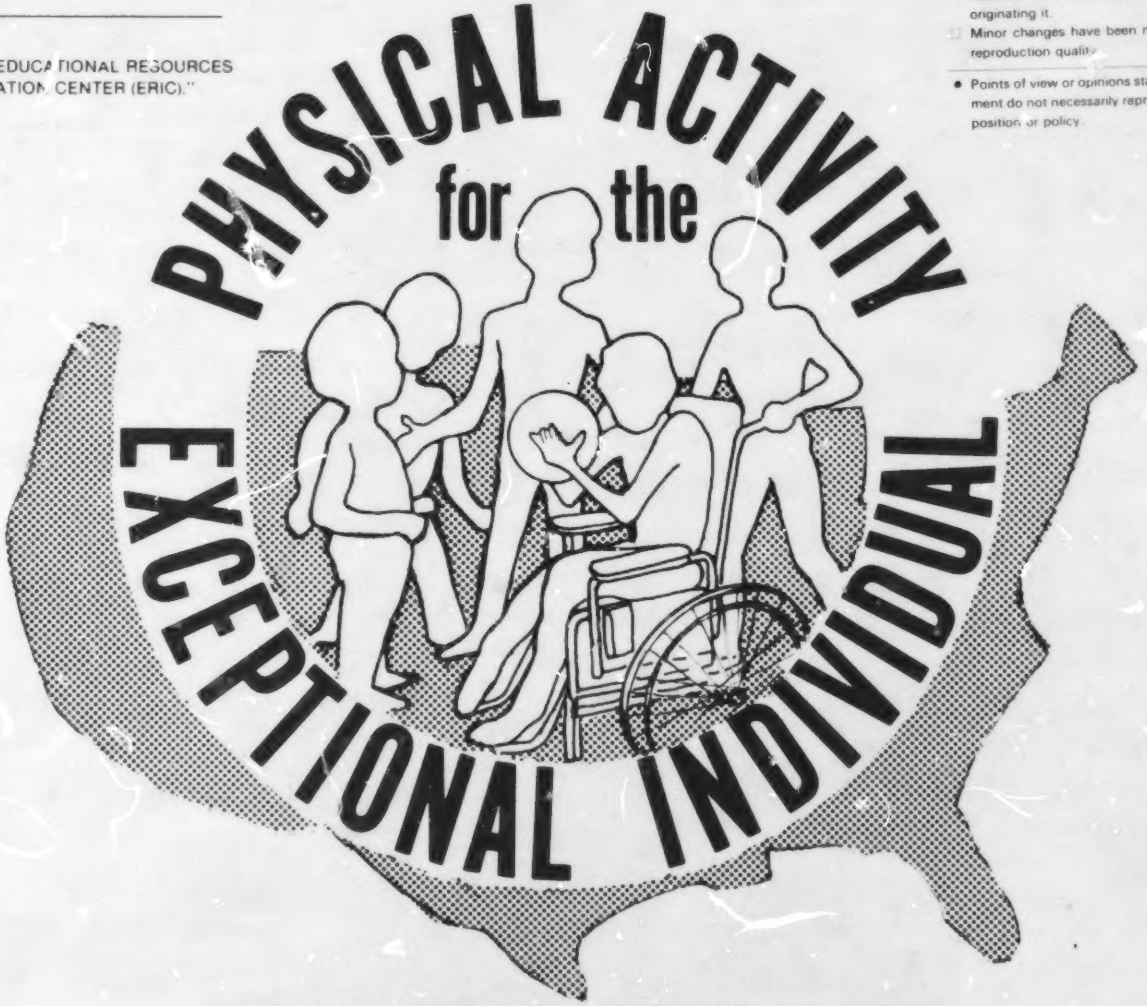

PHYSICAL ACTIVITY for the EXCEPTIONAL INDIVIDUAL

SAN DIEGO, CALIFORNIA
1982

"INVOLVEMENT & PARTICIPATION"

SP 021 896

ELEVENTH NATIONAL CONFERENCE
ON
PHYSICAL ACTIVITY
FOR THE
EXCEPTIONAL INDIVIDUAL

IN COOPERATION WITH

SAN DIEGO COUNTY DEPARTMENT OF EDUCATION
SAN DIEGO UNIFIED SCHOOL DISTRICT
CALIFORNIA STATE DEPARTMENT OF EDUCATION
AND
THE CALIFORNIA ASSOCIATION FOR HEALTH,
PHYSICAL EDUCATION, RECREATION AND DANCE

NOVEMBER 19-20, 1982
SAN DIEGO, CALIFORNIA

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E.T. - THE EXTRA-TEACHABLE

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In order to motivate high student interest levels and still maintain maximum benefit from any particular curriculum area including Adapted Physical Education, students must be properly motivated. Teachers are always looking for that something special---that extra motivational technique or teaching tool that makes work look like fun!

Creating innovative and pleasing ways of teaching the same old skills is an essential part of any Adapted Physical Education program. As educators we know our students often need extended practice times, multisensory approaches, management systems, continual motivation and, above all, time to learn the skills. They love to play, however, they often do not have the skills of their peers in a mainstreamed environment. Many times though they do have the same social and recreational interests and are motivated by the very same things.

The use of good sound educational lesson plans that are exciting and fun is the ultimate in establishing what can and could be done in good physical educational programming. Many of these very lessons established for "handicapped" students have been utilized by regular students and teachers in a continued effort at successful mainstreaming. Levelized circuits, non-competitive games and activities, cross floor warm-ups, graded skill drills and many other carefully structured curriculum components have helped many learn to participate at a higher level than anyone thought possible.

One Step Beyond

Many educators have shown us how to be extra-motivational and how to go one step beyond the ordinary daily curriculum models. However, the manner in which we adapt and adjust these academic extras to physical education programming can be far more exciting. We have the luxury of moving, cheering, playing, dancing---legitimate fun!

Take some time to really think about how you can make your lessons more interesting, fun and challenging. In using music, for example, select appropriate records suited to the mood or tempo of the theme or activity. Popular chart songs, T.V. themes and movie sound tracks are usually student favorites, searching the commerical market for worksheets, activity books, printed contact paper, wrapping paper, pictures, decals and books that relate to your choice of theme will help to make your lessons more visually pleasing.

Always try to gear the motivational theme or activity selection to the age level and interests of your students. Young children, for example, love SMILEY faces but the older student's much more apt to relate to a PAC-MAN face. If possible, theme your whole lesson from start to finish including starting behavior, warm-up, games and activities, transitions and cool downs. Whenever possible, get the students involved in making the lesson or unit operational. Whether it's in helping to make some of the items needed or planning the rules of a new game, encourage their participation and welcome their suggestions. Utilize any of their ideas that are appropriate.

When given the opportunity choose bright, bold energizing colors in your visual aids. Learn to adapt or add to equipment you already have to conincide with a specific theme. Seemingly small touches such as adding faces to balls, covering toss boards and using the Charger's "blue and gold" can make an ordinary drill far more exciting. It is also recommended that materials be made as durable as possible to withstand the wear and tear of repeated student use.

Back to Earth Basics

In order to truly develop a good sound basic Adapted Physical Education program that's also "extra-teachable" you need to:

1. Identify the needs of the student(s): fitness areas, perceptual motor skills, game or sport skills, etc.
2. Record the entry level or developmental stage, chronological age and grade, physiological or health factors, as well as cognitive abilities of all students involved.
3. Determine the teaching area at the site; carpeted multipurpose room, outdoor asphalt only, dirt, grass, gym or classroom.
4. Establish an inventory of what physical education equipment is avalable to you.
5. Pair specified activities or equipment with identified needs of students: balance beams, eye-foot coordination, soccer balls, etc.
6. Identify management options usable with your group: circuits, obstacle courses, small groups games, stations, etc.
7. If you have many classes at the same site, determine the number of students per class, length of each class, rotational system, etc.
8. Determine whether teachers, aides and volunteers will be available to work with program and plan accordingly.
9. Determine exactly what interests and motivates your students. If you don't know, ask them!!
10. Consider what visual aids, paper, equipment, etc., is available for your use through the school, district or community.
11. Decide on a motivational theme or unit: "CHARGERS" - fitness circuit, "SUPER HEROES" - skill stations, etc.
12. Teach the unit to a selected group.
13. Evaluate the unit and all it's components separately from warm ups to cool downs, making sure all skill/need objectives were met. Make constructive judgments and determine what, if anything, needs to be changed.
14. Restructure the unit if needed and if you can repeat it with a different group that has similar needs.
15. Share the unit with someone: another teacher, different school, etc.
16. As a final note, be sure to take the time to enjoy your lessons. Work can be fun for everyone ---- even us "Earthlings!!!"

CARDIOVASCULAR SWIM TRAINING FOR THE DISABLED

Libby Andersen

Many of us enjoy jumping into a pool and swimming a few laps. We know that swimming is a good total body conditioner, that it strengthens our muscles in specific movements and that it provides us with an excellent form of aerobic exercise. Swimming is also an excellent form of exercise for the disabled. The aquatic environment reduces gravity's pull and allows the disabled person to move through the water with certain stroke modifications to meet their abilities. The disabled swimmer can train as well as other "able-bodied" swimmers.

In order to improve your cardiovascular system's response to exercise you must train in that specific sport. Swimmers should train with a workout program that is predominantly swimming, whether it be strength training through swimming movements or swimming in the pool. When involved in a training program you are teaching your body to handle a particular stress and you are causing physiological changes that enable you to swim more efficiently. For example, if you swim long distances your heart will improve its efficiency, due to the aerobic work, and pump the blood with its oxygen and glycogen to the muscles better, removing the fatigue products more efficiently and producing an improved endurance. Or, if you perform a series of sprints for your training program, the muscles will become more powerful, due to the intense work, and they will contract quicker against a greater force and your speed will improve.

Because of this resulting specificity, it is important to develop a mixed training program that prepares the athlete for the type of event that they will be racing. The shorter the rest period between each repetition, the greater the improvement on endurance and the less effect on increasing your speed. The longer the rest period the faster the repeat.

In order to provide variety in the workout it is important to moderate the intensity of the workout and to vary the strokes. Stroke drills should be performed to provide additional resistance in the correct patterns of movement and to provide a break in the workout where stroke correction can take place. Kicking and pulling drills with pullbuoys, tubes or handpaddles increase resistance and develop strength in the swimmer's muscles.

Training Techniques

There are many methods that can be used to alter or vary a workout set.

Interval training is regular repeat bouts of exercise with controlled periods of rest which permit partial recovery. This is an excerise at submaximal levels.

Sprint training is an all out effort at top speed with rest.

Repetition training is a set of regular repeats of exercise at maximal or near maximal effort with a rest period which allows for complete recovery of the body.

Speed play is a continuous swim with the swimmer varying the speed from slow to moderate to fast, etc.

Over distance is the term used when swimming distances greater than the distance to be raced at a speed slightly slower than actual race pace.

Variety is the key to avoiding boredom. Changing the workout intensity, and training the body to adapt and modify itself to meet the effects of stress helps to keep a workout challenging and exciting. When developing workouts for the swimming athlete there are a number of variables which can be altered in order to make a workout more interesting; distance to be swum, the stroke to be performed, the rest interval, the number of repetitions and the time to be performed.

There are several types of sets or groupings of repetitions.

The straight set is done with one distance repeated a certain number of times.

8 x 100 @ 1:30

A slow hard set would involve the varying of the speed or effort during a section of a repeat.

8 x 100 @ 1:30, 2nd and 3rd 25 hard

An increasing rest interval set would be a series of repeats with increasing rest.

8 x 100 @ 1:30 + 5

Ladder 100 - 200 - 300 - 400

RI - rest interval 10 20 30 40

A broken swim set involves taking a repeat and breaking it down to parts.

8 sets of 4 x 25 @ :20 @ 2:00

There are several ways that a workout can be varied in order to produce different physiological effects on the body - whether you are going for speed or for endurance.

Descending repeats call for the swimmer to improve their repeat times by a certain number of seconds over the previous repeat.

8 x 100 @ 2:00 desc. repeat 2 secs.
8 x 100 @ 2:00 desc. repeat 1-4 and 5-8 5 secs.

These are especially effective in teaching pacing and perceived exertion.

Descending intervals are extremely effective when developing endurance. A descending interval decreases the amount of rest leading to a smaller and smaller partial recovery.

3 sets 4 x 100 desc. interval @ 1:30

This means 4 x 100 @ 1:30
4 x 100 @ 1:25
4 x 100 @ 1:20

Descending interval sets modify the rest interval within each set.

3 sets 4 x 100 @ 1:30 desc. 5 secs.

This means that within each set each 100 yard repeat is at a slightly faster interval than the one before and after four of these 100 yard repeats you return to the original interval and more rest. Each rest interval within each set will descend or shorten by five seconds.

Development of Workout Schedule

All workouts should contain some of the different training sets but the development of your workout schedule should reflect what part of the season you are in. In the early season the swimmer needs more over distance and interval work. They need to lay down a foundation which can then be worked off of as they prepare for competition or a time trial. Speed play is also important at this time. The development of endurance and stroke technique is important in the early season because the correct stroke patterns should be developed before the heavy work of the schedule.

When the swimmer moves into the mid-season, over distance and interval work should be continued. Rest intervals should be decreased and repetition and sprint training introduced. By now the swimmer's endurance has been extended and they are ready for some speed work to develop the power in their stroke. Stroke work, kicks and pulls should still be emphasized, especially since once fatigue sets in strokes seem to lose their efficiency.

Late season marks the fine tuning of the swimmer. Over distance is still a part of the workout, but usually as part of the warm up and warm down. Intervals are now being alternated with sprint training in order to alternate partial recovery and full recovery while swimming fast. Repetition training is introduced and the accumulation of all the hard training should produce fast repeats at close to or better than best times.

Measuring the Effects of Cardiovascular Training

A good measurement of the physiological changes occuring in the body due to training is the counting of the heart beat through palpitation. Heart rates can be taken at either the carotid artery in the neck or the brachial artery located at just below the base of the thunb on the outside of the wrist. Training effect occurs after exercising for a minimum of 40 to 60 minutes about at a minimum of 70% of your predicted maximum heart rate (Astrand, 1961).

The formula for predicting your maximum heart rate is

$$\begin{array}{r} 226 \\ -\ \underline{\text{Age}} \end{array}$$

Predicated Max Heart Rate (Kasch, 1981)

By using Karvonens formula one can determine your Target Heart Rate.

220
- Age
X
- Resting Heart Rate (Kasch, 1981)
Y
x .7
Z
+ Resting Heart Rate
Target Heart Rate

A training effect can only occur if you exercise a minimum of three - four times per week at 40 - 60 minutes per bout, continuous aerobic work. Swimmers need to include time for a warm up and a swim down and should swim for at least one and one-half to two hours each practice. A warm up is especially important for swimming. It should contain some over distance work with some kicking and/or pulling, using all four strokes.

Your resting heart rate measures the amount of work your heart performs while your body is at rest. Your resting heart rate can be reduced due to exercise. The heart can pump out more blood with each contraction and therefore has to work less in order to maintain your resting rate.

The exercise heart rate measures the intensity of the work performed. This is directly effected upon by the size of the muscle mass performing the action, the body position and the number of ventilations. The amount of muscle mass can contribute to a greater oxygen consumption and a higher heart rate. When comparing running to swimming, swimming had a lower heart rate. This is thought to be due to the smaller amount of muscle used in performing the action. In swimming, the horizontal body position and the timing of the breath to the stroke affects heart rate, ventilations and oxygen consumption. Heart rate responses in swimming can vary from 10 - 12 beats per minute less when comparing it to running. Athletes with spinal cord trauma T6 and above have reported heart rate maximums ranging from 110 - 120 bpm. This is probably due to the interference of the sympathetic feedback to the heart. Disabled swimmers T6 or lower have been reported with maximum heart rates while swimming from 155 - 190 bpm during tethered swimming tests. Trained disabled swimmers had maximum heart rates ranging from 183 - 190 bmp. (Andersen, 1981)

The exercise heart rate also measures your physical fitness level and the state of fatigue your body is in. Another measure of your fitness level is your recovery heart rate. Taken 30 seconds and 60 seconds after the immediate exercise heart rate, the recovery heart rate should drop back down 40 - 60 bpm. Failure to do so could indicate illness or over training.

The exercise heart rate should be taken at the immediate end of the exercise bout for six seconds and mulitplied by ten. This number will give you the beats per minute (bpm).

Stroke Technique and Efficiency

The key to efficiency in performing the four competitive strokes is in the adaptation of the stroke to the person's abilities. Assessment of the disabled person's abilities can be done by evaluating the effect of the disability on the land and in the water; how do they walk, balance themselves, how much range of motion do they have, how has the disability affected their coordination, what kind of arm strength do they have?

When in the water, break each stroke into the five parts: entry, catch, pull, push, recovery and follow the swimmer through each phase. Check to see how their balance is affected by the disability and their swim stroke technique, how the buoyancy is affected by the loss or gain of lean body mass. Be sure and note the effect on body position as the swimmer moves through the water.

As the disabled swimmer performs each stroke, develop a checklist in order to concentrate on the specifics of each stroke.

Hand Position -	How is the hand positioned during the entry, pull, exit? What is the position of the hand in relation to the elbow and the shoulder?
Elbow Position -	Is the elbow in a bent position, does it slide through the stroke or is it used during the positive phase? Where is the elbow in relation to the body during the entry, pull and exit?
Line of Pull -	With any stroke it is important that as your hand(s) move through the water that the movement be efficient. Check the length of the pull, its width, its pattern. Is it a straight or bending pull? Make sure you know where the power or the strongest point is.
Body Roll -	Balance is directly affected by the arm stroke and the timing of the kick. For every action there is an equal action. Body roll adjusts for stroke recovery and depth of pull. Watch for imbalances in muscle strength and flexibility.
Timing of Kick and Pull -	Most kicking is to enhance arm action (except for breaststroke). Watch timing to be sure kick is occurring at most effective point. Adjustment of kick during fly can greatly assist with breathing.
Ankle, Knee, Hip Flexibility -	Flexibility will affect the direction of the kick. Flexibility will affect muscle strength. Lack of flexibility can cause drag that will produce an improper kick. Recovery of the legs will affect body position and forward movement. Remember action vs. reaction.
Breathing -	Timing of the breath to the stroke varies with each disability. Breathing should occur during the push phase of the stroke but some disabilities shorten the length of the push. Modify the stroke and/or the timing to meet this need.

Stroke Development

Streamlined body position is important to swimming efficiency. As the swimmer performs the stroke they are producing resistance to the water, whether it be frontal or head on resistance, skin resistance or eddy resistance.

To be as efficient as possible is the objective. It is important to minimize certain actions in the water. Avoid up and down movements and lateral movements which cause the body to move from side to side. These movements increase resistance to the water. Many of these movements are caused by the effects of the disability alone and can't be overcome. But usually the swimmer can compensate for these movements by providing themselves with a balancing or opposing movement. It is important to remember the buoyancy factor of water and use it to the swimmer's advantage. Avoid wide arm recoveries, over rolling and breaks in stroke rhythms. During the pull, work to reduce over and under pulls. The hand(s) should be pushing backwards not downwards and not into the body. On the entry an over reach will pull the body laterally. Work on an entry in line with the shoulder, with a correct pitch of the hand. Avoid over emphasizing a cupped hand since too much tension can be the result.

Specific Stroke Drills

There are many stroke drills and apparatus that can be used by a swimmer in order to improve the efficiency of their pull. Categorizing these methods by disability limits their use and adaptability. All of them work with anyone interested in changing their stroke. Keep in mind that some of these drills are not meant to be used with the beginner swimmer but are simply another method to be used in order to become more proficient.

Many disabled swimmers start out on their back. This was probably done to ensure open airways and open eyes. They usually start out with bilateral strokes with underwater recoveries, e.g., finning, sculling, elementary backstroke arms and progress to the back crawl. For some the back crawl won't work because of weak shoulder muscles, poor flexibility or coordination. These problems may cause excessive rolling, wide entry and poor body position. Such a swimmer should be involved in a flexibility program.

To progress to the back crawl stroke, work on one arm drills with under and over water recoveries, rope drills, inverted breaststroke arm drills, drills with hand paddles, flexibility exercises for the shoulder and shoulder roll drills. If a swimmer can kick, work on timing of kick to arms with shoulder lift. A nose clip sometimes may help, especially if the student has trouble coordinating the breath control.

Many swimmers will also be taught to swim on the front first with either a modified breaststroke pull or a long human stroke or "dog paddle." This is important because the swimmer must learn how to readjust their balance and find their midpoint in order to maintain their balance. Underwater recoveries minimize this shift. After the breaststroke arms are learned, the student should shift to the dog paddle arms, still keeping with the underwater recovery, but causing the weight to shift from side to side. Progress to the front crawl. Timing of the kick is important to the timing of the breathing. Use fins and tennis shoes to increase the sensitivity of the body to the leg action.

Breath control is an important task to learn. Timing to the arm pull is crucial Nose clips cut off one airway allowing the swimmer to concentrate on the mouth. Some of the drills used to reinforce exhalation are breathing with tubes, straws, snorkels, bobbing, blowing at ping pong balls, rubber fried eggs, Walking drills for leg extension can easily be expanded to include breathing drills, timing drills and arm drills. Strokes can be broken down into the basics of the front glide with exhalation if need be.

When teaching a stroke correction use all modes of learning; visual, tactile and auditory. Use funny words to depict improper skills, e.g., for a wide recovery ask them why they are waving at you. Use the wall of your pool and have the swimmer feel the wall as he performs the freestyle stroke. Use the lane line and have the swimmer lean over it as he performs the breaststroke. Use ropes or garden hoses and the swimmer will work on pulling himself on the rope with the freestyle and back crawl stroke. Use a pole and have the swimmer swim in between the pole and the wall working on his recovery for these strokes. Use hand paddles, kickboards, pull buoys, wrist weights, floats, floaties and ankle weights. Talk, demonstrate and move their arms for them. Watch for fatigue and loss of sensitivity. Always keep in mind their individuality and your responsibility to adapt the stroke to their needs.

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101 ACTIVITIES FOR EXCEPTIONAL CHILDREN

Lee Anderson
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Games, games, games, some old and some new, but all developed with the exceptional child in mind. This presentation will be a pocketful of motivational games and activities for classroom teachers, physical education teachers or anyone working with the physically limited child. These games are especially valuable in the regular classroom with mainstreamed students -- as the games have been tried and proven true for this unique setting. The activities presented utilize little or no equipment and lend themselves well to criterion testing for IEPs.

The games presented are divided into five major emphasis areas and include developmental progressions in the skills charted below.

Above all, the games are success oriented, emphasize coordination and motor skills, promote positive self-image and encourage appropriate sport conduct.

I. Motor Skills:
    A. Skill Acquisition
        1. Eye-hand coordination
            a. Catching
            b. Throwing
        2. Eye-foot coordination
            a. Kicking
            b. Foot contacts
    B. Gross Motor
        1. Crawling, creeping
        2. Balance and posture
        3. Walking, running
        4. Hopping, skipping
        5. Skipping
    C. Motor Planning
        1. Wheelchair mobility
II. Physical Fitness:
    A. Strength
        1. Upper Motor:
            a. Arm and hand (grip)
            b. Shoulder girdle
            c. Head control

    2. Lower Motor:
        a. Abdominal
        b. Explosive leg strength
  B. Flexibility and Range of Motion
  C. Cardiovascular Endurance
    1. Breathing technique
    2. Vital capacity
  D. Agility

III. Self-Image
  A. Dance
    1. Creative
    2. Square and social
    3. Rhythmic exercise
  B. Body Image
    1. Figure drawing and mirroring
    2. Body part identification
    3. Self-realization (feelings)

IV. Social Behavior
  A. Attitudes and environment
  B. Social Skills
    1. Leadership
    2. Appropriate public behavior
  C. Behavior Modification Strategies

V. Recreational Interest
  A. Spectator Skills
  B. Leisure Time Activity

THE SELECTION OF SPORTS WHEELCHAIRS

Virginia Atkins
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The standard medical wheelchair has been pressed into service for an incredible variety of athletic and recreational endeavors. Wheelchair sports, in their early days, were primarily rehabilitative and social. Now athletes using wheelchairs are participating in every sport from mountain climbing to marathoning. Out of the desire for better performance, modifications were made to the medical wheelchair in order to make it lighter and to allow better handling. Eventually, wheelchairs were redesigned to better accommodate the type of sport and the body size of the athlete. Together with intensive athletic training, sports wheelchairs have generated such feats as sub-two hour marathons, competitive tennis and other outstanding sports performances.

For wheelchair athletes, parents and physical educators, choosing the appropriate sports wheelchair may present an alarming number of choices. The following information is intended to be helpful in the decision to purchase a sports wheelchair.

GENERAL CONSIDERATIONS

Who Will Use the Chair?

The primary consideration in the selection of the sports wheelchair is the user. Body length, leg length, weight of the individual and strength of the individual are important factors for choosing a personal chair. Schools or athletic organizations purchasing sports chairs that will be used by a number of athletes must trade unique personal fit of the chair for utility and versatility.

What Will be the Primary Use of the Chair?

The design and handling characteristics of a sports wheelchair may restrict the use of the chair. Sports such as tennis and basketball that require quick turning, maneuverability and rapid acceleration would be awkward or unsafe to play in a road or track chair.

Who Will Maintain the Chair?

Many athletes find building and maintaining a chair a personal challenge that cannot be trusted to someone else. Fortunately, most chairs can be maintained with a little training and a minimum of tools. High performance components, such as sealed bearing hubs, do not require disassembly, nor are there flats to fix on solid tires. Wheels may be attached to a chair with a quick-release mechanism that does not require tools to remove the wheels from the chair. All components have advantages and disadvantages which must be weighed against the skill of the mechanic and the availability of local service. Some components can be purchased at a bicycle shop and serviced by a competent bicycle mechanic. It is important for the bicycle mechanic to consider the differences in wheels that are used side by side, as opposed to one following the other as with bicycles.

What About Folding Chairs?

Folding chairs have the advantage of taking up less space, making them easily transportable, or requiring less floor space for storage. Some athletes feel they cannot afford to compromise the high performance of a rigid frame for the convenience of folding. With quick release wheels, most sports chairs can be disassembled and placed as a frame and two wheels in a regular passenger car, either in a passenger seat or the trunk.

How Will the Sports Chair Be Transported?

This in itself presents some very important subquestions:

1. Will the user occupy the chair while it is being transported?
2. Will the chair fit in or on a personal or family vehicle and still allow easy transfer of the user?
3. Are local public transportation conveyances accessible?
4. Must sports chairs be packaged when traveling for long distances, extended visits or when more than one chair is being carried?
5. Will there be an additional transportation cost for the wheelchair?

What Should a Good Sports Chair Cost?

New chairs start at approximately $700.00 and go up from there. Just as with any sporting equipment, various qualities of materials and workmanship are available. Exotic materials and prestigious name brands should be weighted against the athletes' level of competition, the life of the chair, the ease of maintenance and the cost of the chair. The athlete who participates in running and court sports may find two chairs necessary for serious levels of competition, while the athlete involved in sports for personal fitness and leisure can combine a basic frame with interchangeable components and reach a satisfactory performance level at an affordable price.

Financing sports wheelchairs is an expensive proposition. The quality and number of chairs owned for personal use will depend on the athlete's financial resources and desire for sports participation. Sports chairs that are purchased for public school use or athletic organization use may be bought through internal funding or with the assistance of philanthropic organizations.

Where May Quality Sports Chairs be Purchased?

The local supplier of medical goods is a place to start. They may have demonstrator models of the different brands of chairs which allow the athlete the opportunity to test the comfort and handling characteristics of the chair. An excellent store will have trained personnel who will be able to suggest chair sizes, seat angles and options that are available. Not every town is metropolitan enough to have a dealer with a full line of sports wheelchairs. The next best conventional source is "Sports 'n' Spokes," the magazine of wheelchair sports. In addition to advertisers, a column reports the innovations in wheelchair technology and new components.

The most common source of good information about sports chairs is word of mouth from the athletes themselves. Unfortunately, parents and purchasing agents for school districts rarely have direct communication with wheelchair athletes. Advice from athletes should be weighed against the potential purchaser's similarity of body style, level of participation and interests.

In addition to the national manufacturers of sports chairs, there are many free lance frame builders. Often these independent manufacturers built or modified their own wheelchairs to enhance performance or reduce the cost of the chair. These businesses often grew from building one or two personal chairs or chairs for friends and are now sizable companies.

Whether purchasing a chair from a national company or/and independent business, contract in writing for length of time from order to delivery, guarantee and availability of parts and service. Investigate the interchangeability of parts from a previously purchased chair, such as seats, cushions, straps, wheels and casters. Ask questions about the depreciation and the resale value of the sports chair. This is particularly important when chairs are used by growing children.

Certain aspects of wheelchair sports are governed by the National Wheelchair Athletic Association, such as the size of the drive wheels, the number of push rims and how legs may be secured while competing in the chair. Sports chairs differ from everyday wheelchairs in that they are usually built for performance rather than comfort. It is not uncommon to find sports wheelchairs without brakes, without handles on the seat back for pushing and without anti-roll devices.

CONSIDERATIONS SPECIFIC TO SPORTS WHEELCHAIRS

Frame and Seat

A frame should be examined for quality of material and workmanship. Welds or other fabrication points should be inspected for strength and flex. The wheelchair should transmit the force applied through the wheels to the frame without flex or wobble. This is true of quality folding chairs as well as rigid frame chairs. When force is applied evenly to the wheels, the chair should travel in a straight path. A frame that is "out of square" will pull to one side or the other. The size of the frame should be appropriate to the user, with considerations made for children. The seat bottom and back should be a tough material that provides support and is easily cleaned. Some provision can be made for upper body balance when the seat is held in place by an adjustable fastener. The seat bottom may be parallel to the ground or slightly raised in the front for additional stability. When the seat bottom is tilted, it is common also for the back of the chair to be slightly reclined. The length of the wheelbase determines how quickly the chair may be turned. Adjustable camber blocks allow changes in the center of gravity, positioning the athlete higher or lower, toward the front or the back of the chair. The running athlete usually prefers a more aerodynamic profile. Often track chairs have a low center of gravity and the seat is tilted slightly back. Seat skirts are used on some models of running chairs. These are extensions of the frame that extend up from the seat and fit snugly around the athlete's hips and legs. Before attempting to sit in a chair with skirts, be sure the seat is wide enough to accommodate! The footrests on some chairs are adjustable, allowing the athlete to raise or lower the knees, depending on the amount of stability desired. Various kinds of straps are usually attached to the frame and run behind the athlete's lower legs to prevent the feet from slipping off the footrest.

Propulsion Wheels

The drive wheels of the chair are the main components of the power train. The size of the wheels will depend upon the use of the chair. Typically running chairs have 700c (27 inch) bicycle rims, while court chairs have standard wheelchair rims. Wheels have two adjustments in relationship to the frame, camber and toe in. Camber means that the bottoms of the wheels are slightly farther apart than the tops of the wheels. Camber is a factor in side to side stability and is important in court chairs for moves that require the athlete to lean to the side. Toe-in is an adjustment that separates the back of the wheels slightly more than the front of the wheels.

Light wheels are a critical factor for quick starts. Sealed bearing hubs are the choice of most athletes, because of their ease of maintenance. Hubs should be chosen for smoothness and strength. The flange of the hub, the part where the spokes attach, should slant slightly toward the center of the hub to prevent spoke breakage.

Wheelbuilding is truly an art. Seek the advice of an expert when spoking wheels. Spoking patterns will depend upon the need for lateral stability, rigidity of the wheel and softness of the ride desired. Spokes should always be high strength, double butted and stainless steel. Spoke guards are essential for basketball and other contact sports. One manufacturer has a one piece snap-on combination spoke guard and push rim.

Tires are available in solid urethane, semi-pneumatic and inflatable tires. High pressure inflatable tires, with little surface area on the ground, are desirable for racing chairs. The court chair can afford more tire surface contact. Also helpful is the ability to roll over small irregularities such as those found on outdoor courts.

Push rims come in assorted diameters, grip sizes and materials. For tennis, the athlete should be able to grip the racquet and still be able to apply force to the push rim. Push rims may be directly attached to the rim of the wheel, or be attached to a spider clip or be applied directly to the spokes. Push rims are typically metal, or metal with coatings of plastic or a spongy material that covers bicycle handlebars. The diameter of the hand rim creates gearing for the wheelchair. Large push rims are lower gears. They make starting and accelerating easy. Smaller push rims are higher gears. Starting and going up ramps is made more difficult; but once inertia is overcome, pushing becomes relatively easy. Caution should be used in moving the athlete to the smaller push rim. Adequate shoulder strength is essential to prevent injury.

Caster Wheels

The small front wheels rest in vertical axles which attach to the chair frame. These casters are essential for good handling of the chair. In court chairs, the axle bearings are adjusted so the wheels move freely. In track chairs, the axle bearings are preloaded, making them harder to turn and less fluttery at high speeds. When seat angles are changed it is imperative to adjust the front caster housing so that it is perpendicular to the ground. Caster wheels can be found in solid urethane similar to skateboard wheels or in fairly high pressure pneumatics. A five inch caster wheel should have at least two inches of trail to discourage front wheel flutter.

Steering pegs for running chairs are frequently attached through the front caster housings. The athlete propels the chair by pushing on the large back wheel, but steers the chair by reaching above the front casters and adjusting the direction. The athlete does not have to push with different amounts of force on the large wheels in order to steer the wheelchair.

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MOVEMENT IS INDIVIDUALITY
AN INTERABILITIES APPROACH
With Iso-Band and Disco-Taps

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There are no limits to the possibilities through "Movement is Individuality, An Interabilities Approach," the emphasis being on the individual, and the interabilities being that each individual, handicapped and nonhandicapped alike, participates side by side. "Movement is Individuality" is not how "I" want "you" to move; it's how "I" can help "you" to feel your movement, feel alive, internalize and self-actualize. I take my cue from what feels good and from what I observe. I want to do it because I feel good doing it, not that I should do it because it's good for me. It feels good to stretch my neck, shrug my shoulders, extend my legs and arms and twist my body. And I observe cats and dogs arch their backs and stretch their legs when they stand up and twist their bodies when they roll over. And I watch the birds extending their wings, stretching their necks and flexing their legs. Stretching has that beautiful carryover animal instinct and makes the self feel good, whereas exercising with each technological advance loses more and more of its natural animal flow.

The myth that exercise is painful or not much fun probably evolved out of "it's easier having it done for you rather than doing it yourself." In truth, through exercise you sleep better, you digest food better, you eliminate waste better, your entire body functions better and your attitude towards life is better. Young people like to grow up to be strong; and in adulthood as they grow older, they would like to maintain their strength. By combining stretching, which is that natural pleasant body positioning with Iso-Band* (an elastic exercise band with soft tubular handles) strengthening, the exercise part of any program becomes calaesthetic rather than calisthenic. And for some, when working out in rhythm to music, exercising can become even more pleasurable.

A Stretch and Strengthen Program with Iso-Band offers the opportunity to develop, maintain and improve upon flexibility and strength. Stretching the appropriate muscles before and after each isotonic Iso-Band movement prepares the muscles to accept the resistance and keeps them more agile and flexible. It's also an ideal way for preparing the body for a variety of sports including, but not limited to, swimming, tennis, golf, racquetball, soccer, football, softball, basketball, track and field, and particularly good for those who sit for extended periods of time.

The proceeding stretches and exercises are illustrative of the more comprehensive program presented in the forthcoming book, Stretch and Strengthen, Fitness is for Everyone, by Bob Anderson and Dr. Donald G. Bornell.

*Iso-Bands can be purchased through GSC Athletic Equipment, Inc., San Pedro, California, or made from inner tube strips.

EXAMPLE 1 - BICEPS EXERCISE

STRETCHING

- Stretch the shoulder and arm muscles by holding the Iso-Band or a towel at each end in front of the chest with arms extended forward.
- Keep slight tension on the band or towel.
- Hold position for ten seconds.
- Repeat stretch with arms extended above head in a "V" position.
- Repeat stretch with arms extended to the rear of the head.
- Repeat stretch with arms extended to the rear and down.

STRENGTHING WITH ISO-BAND

- Position Iso-Band under arches of both feet.
- If in a wheelchair, under foot rest.
- Grip one tubular handle with right hand, palm up.
- If the band is held together with a knot, keep it close to the hand.
- Bend the forearm at the elbow, stretching the band as far as possible with undue strain or until hand comes in contact with the shoulder.
- Slowly lower the hand until forearm again rests on thigh.
- Repeat the exercise until arm is slightly tired.

STRETCHING

- After completing the exercise again, stretch the muscles.

EXAMPLE 2 - HIP ROTATORS

STRETCHING

- From a seated position, bring the left leg up, resting the foot on the front edge of the seat.
- Using both hands, pull the knee up to the chest or as close to the chest as comfortably possible.
- Hold the position for twenty seconds.
- Keeping the same position, pull the knee up to the right using the right hand.
- Hold the position for twenty seconds.
- Repeat the stretches with the right leg.

STRENGTHING WITH ISO-BAND

- Position Iso-Band under arches of both feet.
- If in a wheelchair, under foot rest.
- Place tubular handles on both thighs.
- Spread feet slightly to form a rectangle with the knees.
- Place hands on tubular handles to anchor Iso-Band in place.
- Without moving feet, rotate hips outward against resistance of the band by spreading the knees apart.
- Return to starting position.
- Repeat exercise until hips are slightly tired.

STRETCHING

- After completing the exercise, again stretch the muscles.

The Iso-Band is designed to allow each individual the opportunity to exercise within his or her own capacity. When there are more students than bands, or when creating kaleidoscopic designs with student movements, half as many Iso-Bands as participants are needed. This is accomplished by interlocking the bands the same as rubber bands to form a chain and then tying the two free ends together with a strong cord. Place the bands on the floor in the form of a circle. Have the students count off or identify them as odd/even with the odd numbered standing around the inside of the circle each facing a band, and the even numbered standing around the outside of the circle each also facing a band.

Because each of the bands are loops, two students work off of each band with each picking up his or her part. Exercises and patterns of arm movements can then be worked out for example by students inside the circle raising their arms and students outside the circle lowering their arms. Arm bending movements and walking patterns can be added along with music creating kaleidoscopic effects. When all of the students are in wheelchairs, kaleidoscopic patterns of movement can be made with the way the wheelchairs are positioned and moved while holding bands and moving the arms. When the group consists of wheelchair and nonwheelchair participants, have the nonwheelchair students take turns pushing the wheelchairs during the walking patterns.

Selected stretches and Iso-Band exercises are ideal for preparing the muscles in adapting to a variety of physical recreational activities such as tap dancing. Tap dancing has traditionally been thought of as an art expression for the talented few. Whereas, our bodies are rhythmic; we breath in rhythm, our hearts beat in a rhythm, peristalsis is even rhythmic; and tap dancing with hands or feet, as external expression of rhythm, is for everyone. For those whose mobility is with a wheelchair or have limited use of their legs, Disco Taps** (specially designed removable taps held in place with an elastic strap and Velcro fastener) can be placed on the hands; and for those who can use their legs and feet, the same taps are placed on the soles of the shoes. By hearing the sound of the movement of the taps, or feeling the vibrations, participants, no matter what their limitations, are usually able to coordinate their movements to the sound, beat or rhythm of music.

Uncomplicated tap dance routines can be worked out by teaching a few simple steps with the hands or feet. When the taps are placed on the hands and in a seated or wheelchair position, a lap board of masonite or a table can be used as the dancing surface; or when sitting on the floor with legs extended and spread, the floor can be used.

**Disco Taps® can be purchased through GSC Athletic Equipment, Inc., San Pedro, California

BASIC DISCO TAP STEPS FOR HANDS 4/4 TIME

HANDWALKING STEPS

- Take four steps forward starting with the left hand, right hand, left hand, right hand.
- Take four steps backward starting with the right hand, left hand, right hand, left hand.

HAND SHUFFLE

- Slap both hands forward against board making taps ring. Follow by a slap back towards starting position of hands, making taps ring again.
- The shuffle can be done with either hand, as well as simultaneously with both hands.

HAND STEP, TOGETHER STEP

- Tap right hand, bring left hand next to right hand and tap left hand, move right hand to far right end of board or tap surface and tap, holding for one count.
- Repeat to the left.

ARM ROLL

- With elbows bent, hands overlapping and in front of chest, rotate clockwise four times.

BASIC HAND DISCO TURN

- Tap hands next to right ear. Tap hands behind head by lifting elbows high with fingers pointing to the rear. Tap hands next to left ear, tap hands in front.
- Repeat in opposite direction.

BASIC DISCO TAP STEPS FOR FEET 4/4 TIME

WALKING STEPS

- Walk forward, left, right, left, right.
- Walk backward, right, left, right, left.

SHUFFLE STEP

- Swing left foot forward, brushing tap against floor and swing it back, spanking tap against floor.
- Repeat with right foot.

SIDE STEP TOGETHER STEP

- Tap right foot, bring left foot next to it, step to the right with right foot and hold.
- Repeat to the left.

ARM ROLL

- With elbows bent, hands overlapping and in front of chest, rotate clockwise four times.

BASIC DISCO TURN

- Pivot clockwise on tap of right foot, bringing left foot around and setting it down so that body faces in opposite direction; pivot again on right foot and bring left foot around to original place -- set foot down, completing the turn.
- Repeat to the left.

After listening to some distinct four beat music, select one that you know your students will relate to and enjoy. The routine can then be set down using the following procedure. Count the number of measures and write down the words for each measure, either by listening to the tone or from sheet music. Then decide which steps you feel would work best with the music. The following is a suggested form that can be followed in working out the dance routine.

DISCO TAP TO "BOOGIE SHOES"
(K.C. and the Sunshine Boys)

Measure	Lyrics	Cues	Steps
1	Music		
2	Music		
3	Got to be with you That's my favorite	Walking-step backward	(Move body backward) (1. Right foot steps back) (2. Left foot steps back) (3. Right foot steps back) (4. Left foot steps back)
4	thing, yeah ah and	Walking-step forward	(Move body forward) (1. Left foot steps forward) (2. Right foot steps forward) (3. Left foot steps forward) (4. Right foots steps forward)
5	I can't wait till I see you again	Right turn	(Turn body) (1. Pivot on right tap 180^0) (2. Bring left foot around) (3. Pivot on right tap 180^0) (4. Bring left foot around)

Hand tap steps can be subsituted for the foot steps in the right column.

Whatever procedure you use, remember that when working with the exceptional individual, Movement is Individuality; and through this philosophy, learning will be exciting, challenging and fun for both the learner and teacher, for the teacher becomes the learner as well.

ENVIRONMENTAL AND MOVEMENT RELATIONSHIPS

DISCO TAPS (Removable Taps)

Raindrops
Morse code
Playing a musical instrument
Rhythm of a train
Hailstones on the roof
Woodpecker pecking wood
Rhythmic movement of video games
Riveting rivets
Playing a drum
Tapping the fingers to music

SLAP SPANK SHUFFLE WING ....

ISO-BANDS (Excercise Bands)

Drawing the bow
Rowing the boat
Flying the kite
Hoisting the sail
Drawing the anchor
Stringing the guitar
Stretching a net
Pulling taffy
Braking and clutching an auto
Riding a bicycle

NECK SHOULDERS ARMS BODY LEGS

Special education classes from the following schools presented dance routines using the Disco Taps during the 1982 Very Special Arts Festival held at the Los Angeles Music Center:

"Twain Tappers," Mark Twain School, Lawndale
"KC Hoofers," Kit Carson School, Hawthorne

THE INFLUENCE OF PHYSICAL STRESS ON BONE GROWTH IN STUDENTS WITH LIMITED ACTIVITY

Dr. Nick Breit
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We would concur that educators and therapists working with non-ambulatory individuals have an increasing number of unique challenges. Because of medical-technological advances and mainstreaming in schools and agencies, severely disabled individuals are joining education and recreation programs. With their severe limitations in movement, incorporation of these students into activities is very difficult.

Added to this callenge is the concept of educational accountability--the professional obligation that we are responsible for fulfilling appropriate individual goals. One of our unique objectives in adapted physical education is to offer exercise which will insure enough overload or stress to the various systems of the body. This paper addresses itself to the basic understanding of how the skeletal system responds to various forms of stress and why mobilization of the body is vital to maintain the viability of the skeletal system.

Research in the area of fitness changes in physically disabled individuals is difficult to control and results often conflict. Work done by the Paralyzed Veterans of America has strongly shown that those confined to wheelchairs because of paralysis and amputation have significantly higher incidences of severe cardiac, respiratory, circulatory and skeletal disorders. Many programs claim that these functions improve as a result of exercise.

Recent research (Bar-or, Inbar and Spira, 1976), however, indicates that the effects of traditional sports participation by those with conditions such as cerebal palsy and post-polio often make very little gains in fitness variables. How do physical educators know whether or not their students are attaining their physiologically oriented goals? X-ray or laboratory analyses are needed to identify changes within the skeletal system, therefore it is difficult to ascertain if changes are taking place as a result of exercise. Research is strongly needed in this area. As we pursue the influence of exercise on bone growth, let us review some of the basic factors involved.

BASIC FACTORS OF BONE TISSUE GROWTH

Time does not permit a complete overview of bone growth factors but several points must be remembered: 1) Most bone growth occurs indirectly, in which dormant osteoblasts divide in growth centers. Cartilage is first deposited and is slowly replaced by hard bone in a process known as ossification or calcification. 2) Young bones are more vulnerable to stress because they are not fully ossified and break easily, yet because of pliability, their shape is greatly altered. Adults, in contrast, have less growth and do not adapt to stress as well. 3) Bone cells beautifully align themselves in pillars or bars called trabecula. Cellular alignment is a continuous process in which the trabecula not stressed disappear and new trabecula develop in areas of new stress. 4) Bone tissue continually realigns itself by a process known as the piezo (pressure)-electric effect. Gravitational stress to long bones serves as a stimulus to crystals within the body and these crystals in turn convert mechanical stress into electrical activity. As a result of this electrical activity, positive charges cause bone absorption by osteoclasts and negative charges cause bone deposition by osteocytes. In areas of greater stress the trabecula will, therefore, be increased in number and strength. 5) Wolff's Law, as clarified by Steindler (1955), indicates that the external shape and internal structure of bone is changed according to the stress received. The realignment of the trabecula and cellular activity (pts. 3 and 4) become evident in this Law, for without these points there would be no bone change.

PRINCIPLES OF BONE STRESS

It is known that without physical stress to the body many problems arise. A challenge to all physical educators and therapists is to prevent osteoporosis, demineralization of bone tissue. The calcium is literally absorbed from the bone and the bone becomes more brittle. Wheelchair bound individuals are exceptionally prone to osteoporosis. Like astronauts and bedridden patients who do not receive adequate stress, these wheelchair bound students show increased urinary calcium excretion.

It appears that longitudinal stress from gravity is most important. The tension from muscular contractions is second best and affects primarily small bones. The classic study which illustrates the value of longitudinal stress is cited by Astrand and Rodahl in which healthy subjects had six weeks bed rest. In these subjects the urinary calcium excretion doubled. This increase in calcium was not altered in subjects doing either heavy bicycle pedaling in the supine position for one to four hours daily or eight hours daily of inactive sitting in a wheelchair. However, when subjects stood quietly for three hours daily along with bed rest, only then did calcium excretion slowly return toward normal values. (Astrand and Rodahl, 1977.)

The implications are profound for students with limited mobility. If a student is unable to get in an erect position, with or without assistance, there is no choice but to depend on muscular contractions for the bone growth stimilus.

Although bone tissue responds immediately to new stress, it must be remembered that the magnitude of this response occurs slowly. Gains in muscular strength from weight training occur more rapidly than concurrent changes in bone strength. It is imperative for the progression in weight training or other overload approaches to occur slowly and allow time for bones to develop and keep pace with the increase in muscular strength.

The final bone stress principle to mention relates to the timing of stress. Stress can occur in constant form or in intermittent form. For many years it has been clearly shown that constant stress from gravity or muscular contractions, even though slight in magnitude, usually results in bone atrophy. On the other hand, intermittent stress, even if great, results in bone growth (Mainland, 1945).

Physical educators, in most cases, provide intermittent stress to bones, but what about the constant stress from poor posture or poor choices of activity? It appears that even small constant stress from gravitational torques with poor posture may be weakening the bones. As professionals, it is imperative to take the above principles into account as we plan a developmental sequence of activities for the more physically involved student.

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SUMMARY OF
SPECIAL EDUCATION PARENT FACILITATOR PROGRAM

Sharon Brent
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State and federal legislation mandates parent education classes and parent involvement in educational plans. Public Law 94-142 states that "parents shall be active participants in the planning, implementation and evaluation of their child's I.E.P." Senate Bill 1870 (Section 56363) mandates "Parent Counseling and Training as a Designated Instruction and Service." When these mandates were issued, there were no implementation models for school districts to follow.

The Special Education Parent Facilitator (SEPF) Program was developed to meet these requirements, as well as to serve parents of handicapped children in the San Diego Unified School District. A special education parent facilitator is a parent of a handicapped child who is employed by the school district as a community aide. Each of the 45 special education parent facilitators provides education and support to other parents who have children enrolled in special education in the San Diego schools. (Approximately 11,000 exceptional students.)

Initiating the SEPF Program

The SEPF Program began in the fall of 1979. It was initially funded by an incentive grant utilizing PL 94-142 funds. The program objectives were (1) to serve at least 50% of the parents of preschool-aged handicapped children (ages 3 - 4.9 years), and, (2) to help these parents be more effective participants in their child's educational program.

Fifteen parents were hired as SEPFs at the community aides' wages to work a minimum of 15 hours a week. In addition, a project coordinator was assigned to the project. The project coordinator was a program specialist with San Diego City Schools who supervised the program and planned and conducted nine hours of inservice training per week for the parent facilitators. The following areas were covered by inservice: (1) federal and state legislation; (2) district organization; (3) communication and listening skills; (4) characteristics of all handicapping conditions; (5) tours of facilities serving handicapped persons; (6) due process procedures; (7) writing, monitoring, implementing and evaluating an Individualized Education Progrm (IEP); (8) discipline and behavior modification; and (9) growth and development.

The responsibilities of the SEPFs were (1) to observe in assigned special education classrooms, (2) to research and be prepared to utilize services of community agencies, (3) to make home visits to parents of children enrolled in their assigned special education classrooms, (4) to organize, schedule and conduct informal parent meetings, and (5) to coordinate home and school for achievement of IEP goals for each child. The results of an evaluation survey given to principals and teachers involved in the project indicated that the project's objectives for the 1978-79 school year were met.

SAN DIEGO CITY SCHOOLS
Special Education Department

SPECIAL EDUCATION PARENT FACILITATOR PROGRAM

In the fall of 1979, the San Diego Unified School District applied and was funded for a preschool incentive grant utilizing PL 94-142 funds. The intent of this grant was to employ parents of handicapped children as facilitators to help other parents become more effective in their child's educational program.

Originally, these parent facilitators only worked with parents of preschool children. However, in the fall of 1980, the Special Education Department decided that the program was so effective that it was expanded. It is the assignment of the Special Education Department of the San Diego Unified School District that the Special Education Parent Facilitator Program has resulted in a great number of positive effects, e.g., fair hearings and complaints have significantly decreased.

	Complaints and Fair Hearings
1978-79	38
1979-80	25
1980-81	12
1981-82 (through March 15)	3

It is the feeling of the Special Education Department that the Parent Facilitator Program has played a role in this remarkable reduction.

During the 1980-81 school year the San Diego Unified School District completed a survey of 300 parents of the individuals with exceptional needs. The main thrust of the survey was to determine the parents' satisfaction with their child's current special education program. The results were as follows:

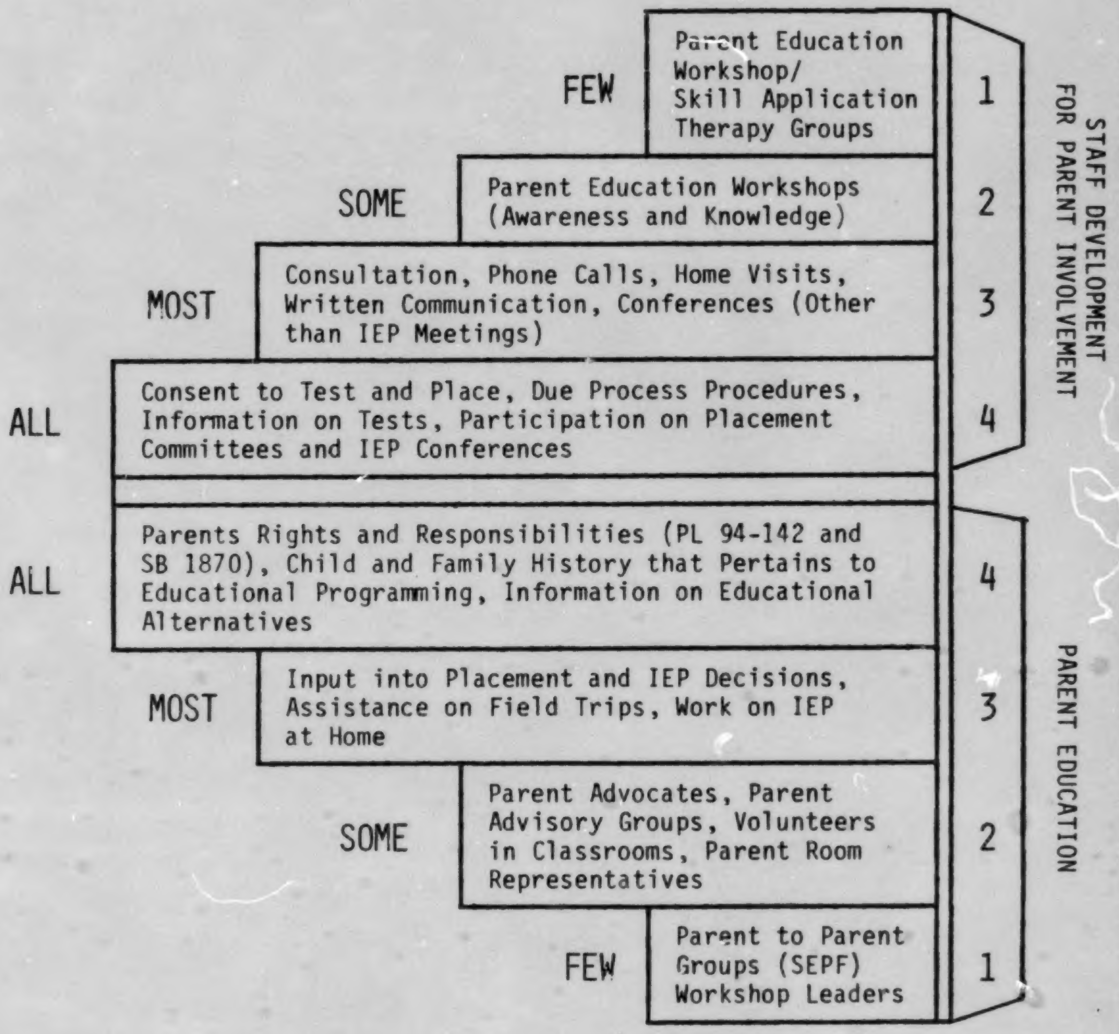
Very satisfied - 113 or 37%
Satisfied - 133 or 44% → 81%
Dissatisfied - 41 or 13%
Very dissatisfied - 21 or 6% → 19%

In planning for the 1982-83 school year, it has been decided that the Parent Facilitator Program will continue. This is despite the fact that Proposition 13 has resulted in significant reductions in all areas. The Special Education Department is strongly committed to the Parent Facilitator Program.

SPECIAL EDUCATION

MIRROR MODEL OF PARENTAL INVOLVEMENT

1982


FEW
Parent Education Workshop/ Skill Application Therapy Groups
1
SOME
Parent Education Workshops (Awareness and Knowledge)
2
MOST
Consultation, Phone Calls, Home Visits, Written Communication, Conferences (Other than IEP Meetings)
3
ALL
Consent to Test and Place, Due Process Procedures, Information on Tests, Participation on Placement Committees and IEP Conferences
4
STAFF DEVELOPMENT FOR PARENT INVOLVEMENT
ALL
Parents Rights and Responsibilities (PL 94-142 and SB 1870), Child and Family History that Pertains to Educational Programming, Information on Educational Alternatives
4
MOST
Input into Placement and IEP Decisions, Assistance on Field Trips, Work on IEP at Home
3
SOME
Parent Advocates, Parent Advisory Groups, Volunteers in Classrooms, Parent Room Representatives
2
FEW
Parent to Parent Groups (SEPF) Workshop Leaders
1
PARENT EDUCATION

Adapted from: UNM Institute for Parent Involvement, Albuquerque, New Mexico, 1978

MOTOR ASSESSMENT OF THE EXCEPTIONAL INDIVIDUAL: PERSPECTIVES ON THE BRUININKS-OSERETSKY TEST OF MOTOR PROFICIENCY

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Motor skill development is an important issue in the overall development of children. The assessment of children's motor ability has become a common and necessary practice for classroom teachers, occupational and physical therapists, physical education teachers and special education teachers. Problems in motor behavior can be indications of general delays in development which are crucial to note in young children, and a great deal of curriculum planning and evaluation is necessary in developmental and corrective programs.

The decade of the 1960's was a period in which considerable interest developed in the assessment and training of motor skills in children. One trend involved the work of psychologists who explored the possible relationships between movement and intellectual development. Many theories evolved during this period which expounded the belief that movement behavior was prerequisite to, and positively influenced, later cognitive development (Bruininks, 1974). Motor assessment in the perceptual-motor vein was designed to evaluate underlying perceptual-motor "processes" thought to be interfering with academic performance.

Perceptual-motor tests and their subsequent activities had a profound influence both on special education and on physical education. These perceptual-motor approaches toward assessment suggested causal relationships between motor development and intellectual development. The influence of these theories is evident in many methods of motor assessment currently in use today. It is important to note, however, that the perceptual-motor theories have been subjected to many questions and investigations concerning their efficacy in enhancing academic and cognitive development (Glass & Robbins, 1967; Kavale & Mattson, 1981). Research on the effectiveness of perceptual-motor approaches has failed to produce supportive evidence in favor of the suggested causal relation between motor and intellectual development.

A parallel trend evolved during the 1960's which involved increasing emphasis on physical fitness in American society. Schools were the first to adopt interest in fitness, as physical education programs greatly expanded. The administration of AAHPERD's youth fitness tests became common practice in American schools as children competed for the presidential youth fitness awards. The educational interest in fitness raised community awareness as American society witnessed the gradual evolution of a serious interest in physical fitness and health. Thought by skeptics to be a "fitness craze," this event resulted in a long lasting renewed dedication toward physical fitness. Today, every facet of society, including the elderly, the young, the handicapped, men, women, schools and even corporations, have embraced the lifestyle that emphasizes exercise and values good health.

In 1975, the passage of Public Law 94-142 incorporated society's value of physical fitness for all handicapped children and youth. Regulations for Public Law 94-142 included physical education in its definition of appropriate special education, becoming the only curricular area to be specifically mandated for inclusion in educational programs for handicapped children and youth.

Furthermore, this special emphasis in Public Law 94-142 is evident in the definition of physical education:

1. Physical and motor fitness.
2. Fundamental motor skills and patterns.
3. Skills in aquatics, dance, individual and group games and sports, including intramural and lifetime sports.
4. Special physical education, adapted physical education, movement education and motor development.

It was during this period of renewed commitment to physical education that the development was started on the Bruininks-Oseretsky Test of Motor Proficiency of handicapped and nonhandicapped children and youth (Bruininks, 1978). Upon initial review of the field of motor assessment, it was apparent that a considerable range and diversity of test items existed in the area of motor development. The review revealed a schism between fine and gross motor assessment that often ignored the concerns of classroom teachers. For many areas of assessment, experience apparatus, and highly subjective ratings were often used in school programs. Moreover, there were low intercorrelations among different areas of motor proficiency. These weaknesses plus obvious questions of content validity of existing scales revealed a need for development of a more comprehensive, well-standardized test of motor proficiency.

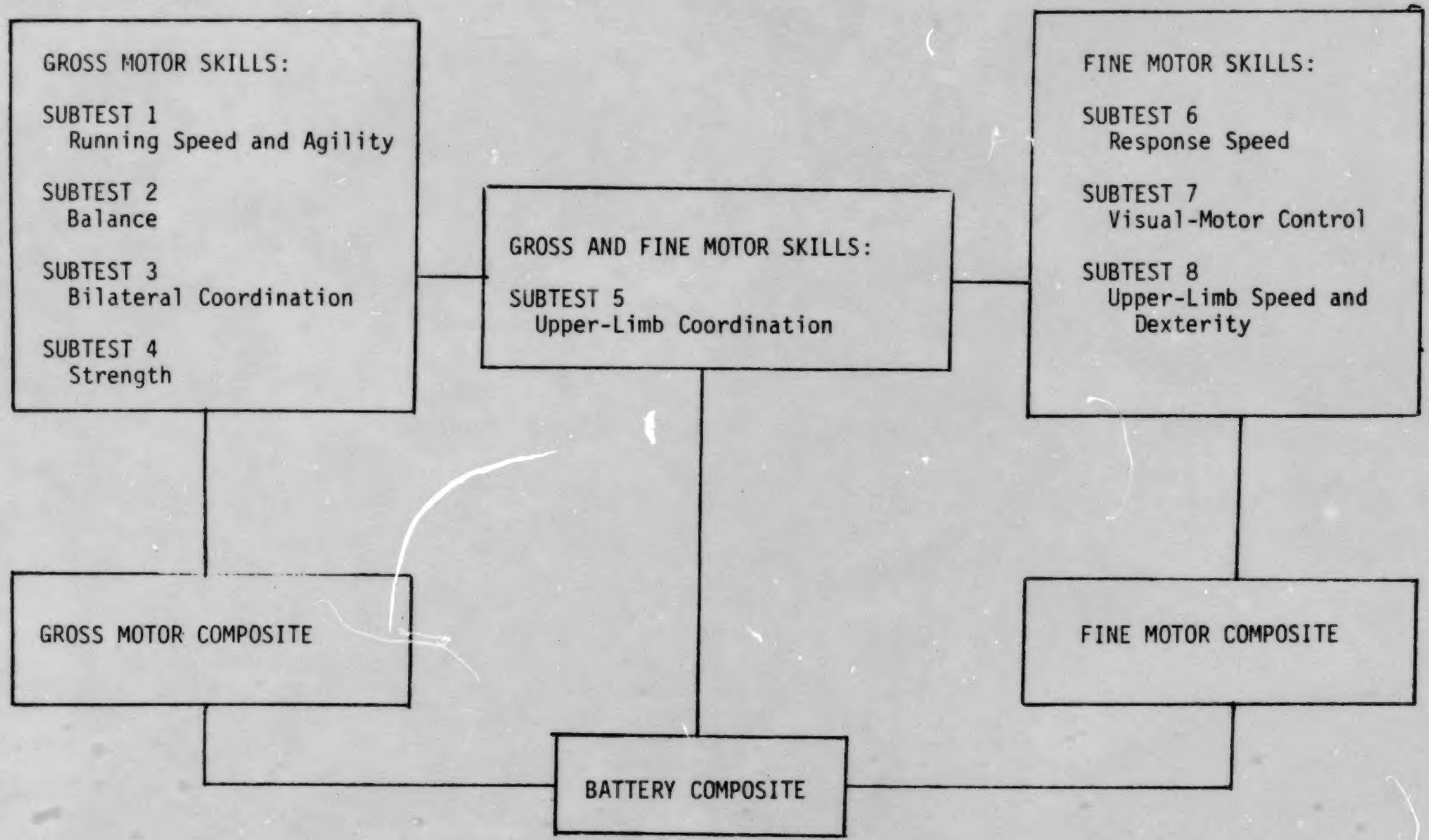
Characteristics

The Bruininks-Oseretsky Test of Motor Proficiency (B-O) was designed to provide information that will help you make useful decisions about the motor development and training of children. The structure of the test is based on a thorough analysis of factor analysis, motor development and motor assessment studies. The test measures eight areas of motor ability: running speed and agility, balance, bilateral coordination, strength, upper limb coordination, response speed, visual-motor control, and speed and dexterity (see Figure 1). These eight subtests comprise the complete battery which is structured to yield three estimates of motor proficiency: a Gross Motor Composite, a Fine Motor Composite, and a Battery Composite. Figure 1 shows the relationship of the eight subtests to the composite of all tests. The Gross Motor Composite score summarizes performance on Subtest 1-4 and provides an index of the ability to use the large muscles effectively. The Fine Motor Composite score summarizes performance on Subtests 6-8 and serves as a measure of the ability to use the small muscles of the lower arm and hand effectively. The complete Battery Composite score summarizes performance on all eight subtests and yeilds a more general index of motor proficiency and development. The short form of the test is a screening measure which summarizes performance on selected items (about 30 percent of the items) from all eight subtests. The subtests in the test structure do not necessarily represent completely separate abilities (e.g., shuttle run may also measure explosive strength). The task within the subtests were designed to require little skill, equipment or specialized space.

The fine and gross motor components of the B-O test have been standardized with nonhandicapped children and youth. The B-O test has been most useful when applied as a tool to provide diagnostic data about a child's developmental motor performance. Results from the test can be interpreted into stanines, percentile ranks and grade equivalents, yielding comparative information with age peers. B-O test results are also useful in determining placement of a student into adapted physical education programs. Information about a child's

Figure 1

Structure of the Bruininks-Oseretsky Test of Motor Proficiency


GROSS MOTOR SKILLS:
SUBTEST 1
Running Speed and Agility
SUBTEST 2
Balance
SUBTEST 3
Bilateral Coordination
SUBTEST 4
Strength
GROSS AND FINE MOTOR SKILLS:
SUBTEST 5
Upper-Limb Coordination
FINE MOTOR SKILLS:
SUBTEST 6
Response Speed
SUBTEST 7
Visual-Motor Control
SUBTEST 8
Upper-Limb Speed and Dexterity
GROSS MOTOR COMPOSITE
FINE MOTOR COMPOSITE
BATTERY COMPOSITE

motor ability, whether for screening or placement purposes, can be extracted in less than one hour using the long form, and in about 20 minutes using the short form. Research studies agree the B-O test is a very effective tool for identifying students with motor difficulties, and as such the B-O test has become a major contributor to the field of motor assessment.

Evaluation

John Haubenstricker and Vern Seefeldt, leaders in the field of motor development at Michigan State University, recently stated that "... the effort expended by Dr. Bruininks in revising the Oseretsky Test of Motor Proficiency represents an important contribution to the assessment of motor behavior in children" (1981). The usefulness of the B-O test as a screening device for children suspected of having gross motor problems was supported also in a study conducted by Haubenstricker and Seefeldt (1981). Their studies indicate that the Short Form, Gross Motor Composite, and Battery Composite all significantly discriminated between children referred to and enrolled in a remedial motor clinic and children without obvious motor problems. Reliabilities among three independent raters on items were also exceptionally high (0.97 or higher for the short form and the three composite scores). Recent publications in the area of educational measurement have also acknowledged the B-O test as a viable, well developed instrument for evaluating motor ability. Studies by Beitel and Mead (1982), as well as test reviewers such as Sattler (1982), Keat (1980), Jones (1980) and Hacker (1970) have commented positively on the physical features and technical adequacy of the B-O Test. Recently, a national panel of school psychologists evaluated various cognitive, aptitude and achievement tests. Only the B-O was recommended for use in its category (Lambert, 1981). This conclusion was reinforced by Larry Rarick and Geoffrey Broadhead, noted physical educators, in comments made at a symposium devoted to the test last year (Broadhead, 1981).

Uses

The results of the Bruininks-Oseretsky Test provides revaluable information for designing, developing, and evaluating motor training programs. The primary uses of the B-O test are: screening, diagnosis, placement, program planning and research. The test provides timely assessment and planning information, as strengths and weaknesses of a child's motor ability can readily be the basis for writing program objectives for a child's IEP.

Either the long form or short form of the B-O test provides valuable information about a child's level of motor development. The test, used either as separate composite scores or completely, is a useful tool for diagnosing deficiencies in motor skill development. The test, used either as separate composite scores or completely, is a useful tool for diagnosing deficiencies in motor skill development. As a diagnostic tool, the B-O test meets the needs of many state and local recommendations for standardized assessment.

The weaknesses evident in the performance of children on the motor subtests can be translated into IEP goals and objectives through means of task analysis and careful instructional planning. Subsequently, remedial motor activities can be planned to provide training in each of the needed areas of motor skill development, as suggested by the test results.

Another use of the B-O test, is that of providing data for research purposes. It is not uncommon for program administrators to be asked to demonstrate program evaluation data, usually by showing positive student outcomes. Pretest and posttest data on the B-O test can be used to evaluate the effectiveness of motor training programs. The short form is often used for this purpose.

Society's emphasis on physical fitness and health is much more than a short-term fad. Interest and awareness of the benefits of physical fitness and movement have permeated educational programs, especially in adapted physical education. The need for adequate assessment tools in placement decisions and in designing and evaluating programs for handicapped children and youth will become an even more crucial component of all educational programs in the 1980's than in previous decades. Careful assessment of student characteristics can assist in planning programs that will contribute to the child's total growth and development in movement, physical fitness, and general health. The Bruininks-Oseretsky Test has been shown from available research studies to provide a useful and reliable means of assessing the motor development and proficiency of children and youth. Further research is needed, however, to assess the range of its applications and determine how the results of this measure can be translated effectively into educational practice.

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A PROPOSED RATIONALE FOR THE INVESTIGATION OF UPPER LIMB MOVEMENT PROBLEMS IN CHILDREN WITH MENINGOMYELOCELE

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Meningomelocele (MM) involves a protrusion of the spinal cord through the dorsal aspect of the vertebral column and is typically classified as a neural tube defect. Failure of closure or re-opening after closure of the neural tube predisposes the developing embryo to MM. This congenital disorder is characterized by such problems as restricted ambulation, orthopedic concerns, bowel incontinence and hydrocephalus. Since the advent of the Education for All Handicapped Children Act (PL 94-142), an increasing number of children, with various exceptionalities, are being educated in the public schools. This is especially true for MM children for a number of reasons. Firstly, it is the major congenital cause of crippling disorders in children. Secondly, many of these children are within the normal range of intelligence and few are therefore educated (or should be educated) in special schools. And finally, there is a strong, lobbying parent group, both at the local and national level, who are demanding an appropriate education for their children.

For physical educators, MM children provide a special challenge. Their lower limb paralysis is not only evident but also predictable on inspection of the location of the spinal lesion. In addition, however, eighty percent of MM children have hydrocephalus. It is the effect of hydrocephalus on cortical tissue that has been reported as the cause of perceptual and perceptual-motor problems (see Anderson, 1977, for review) and also apraxic behaviors (Brunt, 1980 and 1982; Land, 1977). It is also these cognitive and limiting factors of movement potential that are often overlooked by special educators. The cause of the hydrocephalus is a herniation of brain stem and cerebellar tissue through the foramen magnum of the skull - the Arnold-Chiari (A-C) Malformation. This displacement compresses the fourth ventricle and blocks the flow of cerebral spinal fluid through the Foramen of Magendie and Luschka and non-communicating hydrocephalus results.

A-C Malformation - Neurological Involvement

To date, the involvement of the cerebellum in the A-C malformation and its possible contribution to upper limb movement problems in MM children has received little attention (Anderson and Plewis, 1977; Brunt, 1982). This is somewhat surprising considering the importance of the cerebellum in motor control (Eccles, 1973 and Allen and Tsukahara, 1974, provide excellent reviews). In addition, many clinical studies concur on the involvement of inferior cerebellar tissue in the A-C Malformation Type II. In such cases, a "tail" like projection of cerebellar tissue appears below the foramen magnum with an indentation circling the pyramis of the cerebellum thus indicating the extent of the involvement (Peach, 1965). The major component of the herniation is the inferior vermis (Cameron, 1957) which sometimes lacks differentiation from the lateral lobes (Ingram, 1943). The cortex of the uvula and nodule is also usually atrophic (Cameron, 1957). Histologically, demyelination or amyelination of the cerebellar component of the malformation is apparent as is poor development and abnormal form of the cell structure in the granular layer and folia (Peach, 1965). Cameron (1957) reported inadequate vascular function to the "tail" where white matter of the inferior vermis displayed demyelination and diffuse astrocytosis.

40

Along with the cerebellar involvement in the A-C malformation, there is downward displacement of the brain stem. Half to one-third of the medulla has been reported to lay below the level of the foramen magnum (Ingram, 1943). Consequently, the junction of the spinal cord and the medulla forms a familiar "S" shape (Cameron, 1957; Peach, 1965). The medulla is often severely compressed by the posteriorly placed cerebellar tail (Ingram, 1943; Cameron, 1957; Peach, 1965). Histologically, the olivary nucleus is irregularly shaped (Peach, 1965) and the cuneate and gracile nuclei are abnormal (Daniel, 1956) and misplaced (Peach, 1965). The posterior spinal columns are seen to curve around the "S" curve of the medulla to reach the above nuclei.

A-C Malformation - Disruption to Sensory Feedback

The aforementioned neurological involvement in the A-C malformation implies possible interruption of sensory input to movement organization. The cerebellum must receive this input if it is to maintain its regulatory function over motor control. Of importance to the present study are those afferent impulses that are transmitted from the upper limbs. If one considers the previous account of neurological damage due to the A-C malformation, then involvement of certain structures may interfere with sensory feedback. For example, the cuneate nucleus is situated in the dorso-lateral part of the inferior medulla and receives muscle spindle and cutaneous afferents from the upper limbs. Spindle impulses are then transmitted to the anterior lobe, pyramis and paramedian lobe of the cerebellum. The rostral spinocerebellar tract relays information from golgi tendon organs and muscle spindle afferents from the upper limbs. This tract terminates as mossy fibers in the same cerebellar lobes as cuneo-cerebellar fibers. Also, the inferior olive is connected to much of the spinal complex by the spino-olivary tract which transmits impulses from both joint and muscle afferents. From different portions of this nucleus fibers go to a number of cerebellar lobes including the pyramis and uvula and also to the fastigial nucleus and folium of the posterior lobe (House et.al., 1979). In addition, however, the olivary nucleus appears to receive input from the sensori-motor cortex and the red nucleus and could, therefore, be serving as a "comparator" prior to transmitting signals to the cerebellar cortex.

Although the above only gives a very superficial account of anatomical areas participating in sensory input to the medulla and cerebellum, there is nevertheless an obvious resemblance to those structures involved in the A-C malformation. One cannot dismiss, therefore, the possibility that the A-C malformation is a source of upper limb movement problems in MM children. Certain specific problems already noted in this special population such as simultaneous flexion/extension (Brunt, 1982), ataxic-like movements (Brunt, 1981), bilateral motor coordination (Brunt, 1981; Land, 1977); and performance on a simple tapping task (Anderson and Plewis, 1968) need to be further investigated in light of disruption to sensory feedback.

In reviewing the major adapted physical education texts, it is apparent that many have provided incomplete, and often incorrect, information on MM children. In most cases, no reference was made to upper limb movement problems exhibited by MM children. Although these are undergraduate texts, they nevertheless remain a teacher's permanent source of reference. Unless a teacher understands a handicap and movement problems as imposed by the handicap, I fail to see how appropriate assessment and programming responsibilities can be met.

The thrust of this presentation, therefore, is to fully describe a neural tube defect; some of the research that has been undertaken on upper limbs movement problems in MM children; and, finally, how this research has led to current investigations involving this special population.

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BLIND ATHLETES IN THE MAINSTREAM

Charles Buell

Blind athletes compete on the varsities of some clubs, schools and universities. A legally blind individual is one who has one-tenth or less normal vision. There are still many schools which do not permit blind students to try out for athletic teams. It is hoped information in the following paragraphs will help change conditions.

More blind athletes compete in the mainstream in wrestling than in any other sport. Each year more than 5,000 wrestlers with normal vision compete against blind opponents. In these bouts, blind wrestlers win more often than they lose. Every year about 25 blind boys place in the top six spots in various state wrestling meets. Upon four occasions schools for the blind have won state wrestling championships. In 1976 a group of U.S. blind wrestlers defeated the Toronto University Wrestling Club. Many schools for the blind have compiled extended winning streaks against public high schools in wrestling.

James Mastro, who has very low vision, placed third in NAAU Greco-Roman wrestling and was selected as an alternate on the 1976 U.S. Olympic Wrestling Team. Sightless Mike Zorick has four times placed in the top four in his weight in national USWF competition.

When Doug Blubaugh wrestles, he must remove his glasses which lowers his vision to that of legal blindness. In 1960 he won NCAA, NAAU and Olympic titles and was selected the Outstanding Wrestler of the World. A few years ago, Doug Blubaugh was elected to the WRESTLING HALL OF FAME.

With one-twentieth normal vision, Trischa Zorn of Mission Viejo, California, has times of 59.47 and 2:06.64 in the 100 yard and 200 yard backstroke swimming events. For two consecutive years she has qualified for the NAAU swimming championships and is one of the top backstrokers in the country, blind or sighted. She was elected to the 1981 All-America High School Female Swimming Team. She has the distinction of being the first legally blind female to attend university on an athletic scholarship.

In the 1979 New Mexico State Gymnastics Meet, legally blind Pita Quintana placed second in valuting and fifth in an eleven-around. Letters in gymnastics were recently won by Gail Castonquay at Weymouth South High School in Massachusetts and Anna McHale at Magnolia High School in Anaheim, California.

Sightless Tony Maczynski placed sixth in a national karate championship and earned the Black Belt. Legally blind Kim Orsick entered the National Women's Weightlifting Meet as an eighth grade student. She deadlifted 240 pounds and benchpressed 180 pounds.

Legally blind Elwin Kelsy of California and his partner placed fifth in the National Junior Pairs ice skating competition. This earned him a job in an ice show. Stash Serafin, though totally blind, has been featured ice skating on national television. In 1980, legally blind Michael Lawson placed second in the state of Alaska and eleventh in the Western Region in Men's Solo Disco Roller Skating Meets.

A game of 298 was bowled in 1979 by legally blind Don Bleloch. A game of 300 is perfect. Jenny Reeves, a sightless bowler, rolled a three game series of 454 at the 1965 International Bowling Congress Tournament.

In 1981, two blind men, Nigel Verbeck, 40, and Gerald Price, 48, water skied across the English Channel in three and three-fourths hours. Rough seas and dense fog made the trip of 35 miles difficult. However, they raised about $30,000 for charities for the blind. Sightless Dennis Moore paddled a canoe solo across the English Channel in 1973. Another sighless athlete, Oral Miller, was a member of the Princeton University crew some years ago.

Suppose you were totally deaf and totally blind, would you be able to compete in athletics in the mainstream? For Rick Joy of California, the answer is "Yes." In high school he won medals in wrestling and had a bowling average of over 100 pins. Today he swims well and participates in tandem cycling and other sports to keep himself physically fit for his work at an electronics firm.

Recently sightless Tore Nearland, a 25 year old Norwegian and his sighted partner tandem cycled around the world in 79 days which is believed to be a record. John Dickey, 7[illegible], tandem biked with a sighted acquaintance across the United States to attend the 50th reunion his graduating class at Amherst College.

In the summer of 1981, a group of handicapped persons, including five blind individuals, climbed the 14,410 feet peak of Mt. Rainier in the state of Washington. A few days after the climb, President Ronald Reagan congratulated them at the White House.

One of the outstanding runs for a man, blind or sighted, took place in New Zealand a few years ago. Sightless John Stratford ran 420 miles from Wellington to Auckland in an elapsed running time of 61½ hours. His feat inspired the entire country of New Zealand.

A legally blind associate professor, Bill Daniels, holds the record of four hours and 35 minutes for the 40 mile run from Arcata to Willow Creek in California. During the run he ascended to an elevation of 4,400 feet.

Totally blind Harry Cordellos of San Francisco has run over 70 marathons, some of them in less than three hours. He runs with a sighted partner and they always place in the top one-third or higher. In the Hawaiian Iron Man Triathlon, he was shown on national television swimming 2.4 miles, tandem biking 112 miles and running a marathon in about 16 hours.

Leamon Stansell, legally blind, has won letters in track at Lynwood High School in California. He won his league two mile championship and placed fourth in his division in Southern California with a time of 10:09.5. He has run 1500 meters in 4:15.9. Janet Rowley high jumps over five feet for the women's track team at Boston University.

Sightless Fritz Assmy of West Germany defeated all sighted competitors in the 100 meter and 200 meter dashes for his age group, 65-69, in the 1977 World Masters Meet. Running with his sighted son-in-law, the times were 12.5 and 26.0, which are records for the age group.

CONCLUSION

There are sightless and legally blind athletes who can compete on an equal basis with their sighted opponents on all levels of competition. Blind people have demonstrated their capabilities in various sports. There is no reason why schools should not permit them to try out for athletic teams in a number of sports.

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PROJECT INTERDEPENDENCE

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In commemoration of the United Nations International Year of Disabled Persons, the California State Departments of Education and Rehabilitation with the collaboration of the Department of Parks and Recreation and the California Conservation Corps initiated a high school project to:

- Promote full integration of students with disabilities into all educational settings.
- Eliminate stereotypes toward people with disabling conditions and build a climate of mutual acceptance.
- Join school and community resources.
- Initiate projects that link students together through cooperative learning and community involvement.

This effort, Project Interdependence, has as its goal the full integration of students with disabilities into their high school environment, using the students themselves as attitude change agents.

Eighty students from ten high schools statewide selected for their cooperative relationships with the Department of Rehabilitation participated in an exciting, intensive wilderness-oriented experience at the Jones Gulch YMCA Camp at La Honda the week before Thanksgiving. Half of the students who participated had disabilities and half did not. Each school sent a faculty member to act as a school anchor. Facilitators for student activity and discussion groups were drawn from independent living centers, Department of Rehabilitation counseling staff, the Special Education Resource Network and environmental education projects.

Activities during Discover Interdependence Week provided maximum opportunities for interaction and cooperation between students with disabilities and their non-disabled peers. Several major activities planned, such as an adventure ropes course, were designed to examine the larger issues of compassion, trust and commitment and involved reasonable risk-taking. Representatives from the Department of Parks and Recreation taught students to do trail and barrier surveys that could be applied to accessibility projects in their own schools; California Conservation Corpsmen led a work project in tree planting that followed a long hike.

Other activities included a workshop in which students were shown how to assess their own strengths and weaknesses and which incorporated principles of non-aggression; a talent show; a festival of inventions and assistive devices to show new frontiers in technology and careers; as well as visual and performing arts. Each activity was totally integrated. Following such activity, students met in small groups with a facilitator to discuss what they had experienced and learned.

One of the unique features of Project Interdependence is the plan for continuity. Community support networks have been activated to assist students to initiate projects in their own schools in recreation, integrated sports, the sciences, disability awareness, the arts and new careers. These projects are expected to raise the level of consciousness of students, provide opportunities for regular education and special education students to interact and link school and community resources through joint achievement. The project includes a research component to evaluate its effectiveness in eliminating stereotypes and barriers toward students with disabilities. A follow-up meeting is planned in the spring for students to share problems, accomplishments and future plans.

Discover Interdependence Week was a great success. Many of the participants - students, teachers, disabled and non-disabled, experienced major attitude transformations. Planned activities during the day and throughout each evening as well as informal occasions like meals in the dining hall provided opportunities for many new friendships and for discoveries about the nature of differences and the chances they give us to grow.

Challenges were extended and overcome as students in wheelchairs danced, a young man on crutches climbed over a rope barrier and a severely withdrawn, autistic youngster reached out to another for the first time. Discover Interdependence enabled us all to experience the common bond of our interdependence.

Project Interdependence has won the enthusiastic support of all who participated and sponsored the event. The proof of its value to train students to make changes in attitudes and behavior in their own schools will come later as the success of student projects is evaluated. At present, Department of Rehabilitation staff, members of the Special Education Resource Network and members of the community support networks in each of the ten school districts that participated are visiting each of the student teams to assist in local school projects.

Plans for the future include formation of a public and private partnership to sponsor future Discover Interdependence Weeks.

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LANGUAGE DEVELOPMENT THROUGH MOVEMENT FOR DEAF-BLIND AND SEVERELY MULTI-HANDICAPPED CHILDREN

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Deaf-blind and other severely multi-handicapped children seem to be as cut off from access to the environment as possible. Two very important sensory modalities are missing. These children are able to manipulate objects, but they have limited means for obtaining feedback which might lead to anticipating the consequences of their actions. For these children it seems that structured, controlled interactions leading to exploration and discovery of objects may be a useful way to extend the foundations on which language can be built.

Dr. Jan Van Dijk, Pincipal of the Institute for the Deaf, Sint Michielsgestel, The Netherlands, has proposed the use of a motor development approach in the education of deaf-blind children. The article that best defines Van Dijk's approach is his article "The Non-Verbal Deaf-Blind Child and His World, His Outgrowth Toward the World of Symbols." The child's initial relationship and understanding of the things in his world is based on motor patterns and his handling of objects. Van Dijk refers to Newell Kephart's book, The Brain Injured Child in the Classroom. He states that Kephart has said that "motor experimentation and motor learnings become the foundation upon which subsequent learning is built." In many ways, the world of the severely handicapped deaf-blind child is limited to the child himself. The world outside of the child is used in a way for self-stimulation and satisfaction. The deaf-blind child's relationship to people and objects remains on a very primitive level. The teacher can assist the child's communication with the world by establishing "a moving-acting-relationship" with him.

Van Dijk has identified several stages leading to symbolic language. These stages have been identified as resonance phenomenon; co-active movement; non-representational reference; imitation; and natural gesture. The stages are not mutually exclusive, so that the child can be moving through several stages at the same time.

Resonance phenomenon is the beginning level for developing language through movement. The child comes to the understanding that he can have some control over his world using his body to communicate. The teacher begins by observing the child's gross body movements and becoming physically involved with the child in one of those movements. For example: the teacher observes a child with no formal means of communication or interest in communication. The child spends much time rocking back and forth. The teacher initiates communication with the child at his level, getting on the floor with the child and beginning the same rocking motion. Communication is encouraged from the child by stopping the motion briefly as they rock together and waiting for a signal from the child indicating that he wants to continue moving. These movements are imitated by the teacher. The child may push his head against the teacher's chest. This would be interpreted as a signal because it is part of the rocking movement. The communication would be reinforced by beginning rocking again with the child. If the child does not offer a gesture indicating that he wants to continue moving, the teacher might shape an appropriate gesture that is part of the movement. Different movements will require different gestures from the child. The key to the resonance phenomenon level is that the gesture comes from the child's movements.

Once the child is giving consistent gestures for different movements, it is time to move on to the co-active level. Bodily contact between teacher and child is still very close, and so the term co-active.

This stage involves moving through space with the child in a defined area. For example: the teacher and child scoot the length of a floor mat together. At the end of the mat, they change to a crawl position and crawl back to the beginning of the mat. This scoot and crawl makes one co-active sequence. Each sequence is repeated three times with the teacher pausing before changing positions on the third try to see if the child can remember the second position.

In this way, both memory and anticipation are developed. When three sequences are done during the co-active movement time each day, the child can get the idea of what is expected of him. It is important to change the movements within each sequence every day. This forces the child to think and anticipate changes on his own. As the child learns to anticipate the change within the sequence, the sequences can become more complicated. The child and teacher are still in close contact, side by side.

After the child is attending well and following changes, the teacher increases the distance between herself and the child. The teacher can begin the sequence and have the child join her. This distancing should gradually increase until the child is sitting, watching and remembering an entire sequence. The totally blind child will need to move along next to the teacher, feeling and recording the movements, and can then demonstrate memory by repeating the sequence alone.

When the child is able to sit and attend to an entire sequence, and do it correctly, he has then reached the important level of imitation. The child is now differentiating between himself and the outer world. He can begin by imitating gross body movements, body positions, limb movements, positioning objects, hand movements (signs) and eventually finger positions (finger spelling).

Nonrepresentational reference is begun at the resonance phenomenon level and is developed along with the other levels. The purpose of the activities in this area is to assist the child in understanding symbols. Initially, the child develops body image and the ability to attend to another person. During this stage the child is manipulated through rubbing or pointing to each of his body parts after the teacher has rubbed or pointed to same part on herself and the child. After the child can imitate points and various limb movements without being manipulated, they move on to more abstract representations of a person, such as a doll or stick figure.

Natural gesture is also developed concurrently with the other areas. A natural gesture is a signal which is personal and perhaps unique to a child. The child's natural gesture coincides with the meaning a certain object has for a particular child. The first gestures we use with a child should be gestures which imitate the motor play that child is involved in with that object. Some examples of this are: if a child tosses a ball underhand with both hands then the natural gesture for ball for that child would be that action; if a child rocks a doll in his arms, then his natural gesture for doll is that rocking motion. A natural gesture will come from the teacher observing the child's action with an object. These natural gestures will be used by the teacher and others interacting with the child as the object is presented, as the child uses the object, or at any time reference is made to the object.

Through this brief sketch of a language development system, I have attempted to make the point that attaining concepts like object permanence and the ability to see consequences from actions may be basic to acquiring language. For deaf-blind and other severely multihandicapped children, it is vital to provide a controlled, structured environment in which they may explore and discover not only their relationship to objects, but to themselves, others and world in which they live.

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ADAPTED PHYSICAL EDUCATION
CONSULTANT MODEL FOR DEVELOPMENT CENTERS

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The adapted physical education consultant model is one approach to meeting the physical education needs of Development Center children. With the significant decrease in state funds and the tightening of eligibility/placement criteria for special education, there has been a reduction in staff providing support services. This situation has made it difficult for districts to effectively meet the support services needs of their children. As a result, districts are looking to other ways to offer these needed services. One approach related to physical education is for the classroom teacher to be responsible for the daily instruction in physical education with direct assistance from an adapted physical education teacher. The key to success of this model is the close working relationship between the classroom teacher and the adapted physical education teacher. Important aspects of this approach are noted below.

Assessment

The adapted physical education teacher assists the classroom teacher in obtaining accurate information pertaining to a child's abilities, capacities and needs as they relate to physical education. To do this, input and cooperation from other support staff such as the physical therapist, occupational therapist, school nurse and speech therapist is needed. By using the technical expertise of each professional, the most effective program can be developed to not only improve the physical but the mental and emotional well being of each child. Each support service may make contributions in the following areas:

- The school nurse helps in obtaining clearance from the family physican for activity involvement of a child with medical problems (medical precautions, potential for activity involvement, effects of medication on a child's behavior, etc.).
- The physical therapist/occupational therapist offers information dealing with motor development, muscle tone, range of motion, reflex levels, abnormal reflexes and the resulting improper positioning, etc.
- The speech therapist provides input related to the most effective way to communicate with both verbal and nonverbal children.
- The adapted physical education teacher collects information regarding young children in the areas of sensormotor and basic movement skills and patterns. For older children, the stress is in assessing play and recreational skills, as well as physical fitness.

Once this information is obtained from all support staff, the classroom teacher and adapted physical education teacher can take the next step in planning an effective individualized activity program that does not run counter to any other needed services.

Programming

Using information gained from the adapted physical education assessment, and with input from other support personnel, the adapted physical education teacher plans cooperatively with the classroom teacher a prescriptive program of activities for each child. Below are noted points that should be kept in mind when planning the activity program, as well as an example of how each relates to adapted physical education.

- Select appropriate goals and objectives for each child using the observation and assessment data.

  On reviewing the health records of one child (M.K. is a 10 year old female), it was found that she had no known health problems or medical restrictions related to physical activity. Through the adapted physical education assessment it was observed that she was significantly delayed in most basic movement patterns, i.e., running, jumping, catching, etc.. Specifically, in the area of catching, she could track a suspended ball which was swinging, but she was unable to scoop or catch a balloon or large Nerf ball tossed to her. In this instance, the adapted physical education teacher and the classroom teacher felt a reasonable objective would be to have M.K. learn to catch (scoop into her chest) a large Nerf or rubber ball, using hands and arms, 2 out of 3 times while standing 5 feet away from the teacher/aide.

- When necessary, break down movement skills specified within each short term objective into a series of smaller steps, thus providing an outline of exact sub-skills to be taught to the pupil.

  Using the objective stated above for M.K., the adapted physical education teacher sequenced the skill as follows: 1) Have M.K. sit and stop with her hands a ball rolled toward her and to one side of her body or the other; initially, M.K. may need assistance to perform the task. 2) Have M.K. sit with her legs spread, hands in palms-up position, and scoop rolling ball into her chest; at first assistance may be required for her to learn the desired task. 3) Have M.K. sit with legs spread, hands in palms-up position and scoop a bounced ball into her chest. 4) Repeat #3 with the exception that the ball is tossed instead of being bounced. 5) Have M.K. kneel, hands in palms-up position and scoop a bounced ball into her chest. 6) Repeat #5 with the exception that the ball is tossed instead of being bounced. 7) Have M.K. stand, hands in palms-up position and scoop a bounced ball into her chest. 8) Repeat #7 with the exception that the ball is bounced. If M.K. is successful in catching (scooping) the ball 2 out of 3 tosses from 5 feet away, she has achieved the desired objective.

- Develop strategies and approaches to assist each student to achieve desired movement skills. This may include modification of existing play and recreational equipment.

Continuing with the development of an effective physical education program for M.K., the speech therapist stressed that M.K. was non-verbal, but understood simple words and signs, so this mode of communication would be stressed. In addition, it had been observed that at times M.K. was aggressive and inattentive so the classroom teacher offered input related to certain reinforcers (pink objects and bells) that M.K. has responded to in a positive way; these were incorporated into her instructional plan.

- Plan the most effective classroom organization which allows the teacher to encourage individual growth, yet provides the opportunity to be aware of the total class activity program.

All the above mentioned points were kept in mind when planning each child's individualized activity program. Then once this information was compiled, the adapted physical education teacher and the classroom teacher determined the most effective way to organize instruction for the entire class. In this instance a small multipurpose room was available to the class, as well as a variety of equipment and supplies to encourage growth in movement skills. As one part of the total activity program, the teacher chose to set up three stations stressing the curricular areas of static and dynamic balance, locomotor skills and manipulation of objects since these seemed to be primary areas of need by all the pupils. The students were organized by ability into three groups. The classroom teacher and two aides would each be assigned to supervise one of the three groups. During the class period, each group would be given equal time at each station. Within this arrangement the classroom teacher was able to work individually with a few children while still alert to the progress of the children in the other groups.

Monitoring

The adapted physical education teacher schedules at least weekly visits to each classroom. This time is spent in helping the classroom teacher collect and interpret information as a basis for possible modification of the learning environment or equipment, in making decisions about the sequence of movement tasks, in determing the readiness to proceed to the next level of instruction, etc.

BRAINSTORMING IN CREATIVITY: A PARTICIPATION WORKSHOP

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Creativity has been an "issue" in education and other professions for some time. Professionals have talked highly of it, pointed it out in others, and have no trouble defining it. Institutions such as education, medical professions, industries, and companies save money by hiring creative individuals. These individuals turn imaginative, impractical, "raw" thought into exciting, valid, powerful, and practical methods, texts; and techniques that save infinite numbers of dollars, and saving money in today's economy is of primary importance. Understanding the nature of creativity and conditions that facilitate or inhibit it may help us to be more proficient at creating.

Creating is imagining, experimenting and researching. You imagine from thoughts compiled from past experiences. A physical object can be used to help facilitate thoughts from your past experiences. Thoughts lead you to experimentation on a small scale (partially mental and physical). Research is taking the practical application into the "field" for study.

This workshop is designed to show you what activities and equipment we, as adapted physical education teachers, have created, why we created them, how we created them, and how you can create your own activities and equipment.

WHY!

Three primary reasons were the cause of initially brainstorming in creativity. The first, budget cuts, can, of course, account for any kind of change today in education or any other profession. Secondly, was a definite need for the severely handicapped children at the developmental centers to be able to participate in a variety of activities at school play days and carnivals. Also, the County Special Olympics needed more of a variety in games for the severely handicapped. Lastly, being an itinerant teacher, as some of you well know, has certain disadvantages. Hauling mats, balance beams, stegels, etc. around the county was wasting a lot of valuable teaching time and we needed to remedy the situation. Time and money saved provided improvements in other areas of the program.

Secondary Reasons for Creating

Creating prevents stagnation and "burn-out".

Creating encourages others to create onto your ideas.

Creating is fun!

Creating provides and satisfies challenges.

Creating fosters professionalism.

HOW!

Brainstorming! Using unrestrained participation in discussion to solve a problem or develop a new idea. Creating is evolving from thought or imagination. If we can use unrestrained imagination to get "raw" ideas, the next step is turning these ideas into practical applications. This is how we began.

Subjects: Parents, teachers, and/or students.

Objects: Xerox tubes, tennis cans, paper towel tubes, bow and arrow, and medicine ball.

Setting: School room, five tables, five pencils and note pads.

Parents were invited to spend one small portion of their evening (30 minutes) for the benefit of their children. We placed one object, one pencil, and one note pad on each of five numbered tables in one of the rooms at school. As the parents arrived, they were assigned a table. When seated, everyone was told they had one minute to write down as many activities as they could think of to do with the object on the table. That was a lot of work! If they got "hung up" on words, we asked them to use verbs as often as possible. Afterward all the ideas were collected, arranged by object, and then scrutinized at a later date for more practical considerations. The results of the session yielded five activities used about a week later in a school carnival. Later in the year they were used at play days and the County Special Olympics. The activities were designed without thought given to specific goals or objectives. Later the teacher, with consultation from the adapted physical education teacher or therapist, wrote the appropriate goals for each activity. The activities were used by severely handicapped, trainable mentally retarded, and some learning handicapped students.

The brainstorming session described above was specifically addressed to objects on a table. This same session can be carried out using students and/or environments as the topic of unrestrained imagination.

WHAT!

We created a log of different games, activities, and exercises that were enjoyed by children of all ages and handicaps. The most enjoyable activities have been put in a yearbook, "200 Activities for Adapted Physical Education." Below are some of the equipment/activities from that book which we will explain and demonstrate.

Brainstorming With Innertubes

Large innertube strips - Body differentiation (teams and individuals)
Resistive activities
Strengthening skill muscles

Small innertube strips - Tandem games/activities
Eye-hand/foot coordinating
Reaction and cooperation

Brainstorming With Towels

Teaching catching and throwing skills

Adapting the towel to the ability of the student

Sequencing the skill of catching - hands together
eye-hand coordination
reaching and moving laterally

Brainstorming With Games

Obstacle baseball
Beachball tennis
Elastic bowling

Brainstorming With Blindfolds

Body challenges
Resistive activities

How Can You Create Your Own Activities?

Change!
Risk!
Adapt!

Change the obvious to the different. Let's take an environmental playground that has several inclines. Instead of having the children walk up the inclines forward, have them go up a different way each time: backwards, sideways, hands and knees, blindfolded, on toes/heels. When you get a new piece of equipment, make up ways to use that equipment other than what the instructions say (using common sense, of course).

Risk a blow to the ego by deviating from the norm of everyday activities and games. Give the kids some variety of the traditional games such as baseball, soccer, basketball, etc. Many ideas have been lost because the "thinker" wouldn't risk experimentation fearing his feelings may have been hurt. The biggest inhibitor of creativity can be pride!

Adapt everything you work with at some time or another. This means equipment, environment, and student. It is impossible not to be able to adapt one or more of these unless you don't wish to do so. Remember that when you adapt one of the above you may change a goal. Just because someone else writes an objective for an activity doesn't mean that you cannot see a different objective within that same activity.

We hope that from this workshop you will go back to your place of work, drag that old equipment out of the closet, sit down and brainstorm different ideas that will help you meet the needs of your students. We hope that what you saw us do in the workshop today inspires you to change the things you saw and create new and better activities.

PHYSICAL FITNESS FOR EXCEPTIONAL INDIVIDUALS IN SECONDARY SCHOOL PHYSICAL EDUCATION

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The main purpose of physical fitness in high school physical education is to help students grow to their fullest potential physically - help them to a healthier life and help them perform the physical activities they must do and those they want to do more effectively and safely. All of the components of physical fitness have a relationship to better performance in physical activities. The exact relationships of program content and health goals and objectives are somewhat different from the exact relationships of program content and work, game or dance goals and objectives. These relationships and specific activities included in the physical education program must be clearly understood. The appropriate principles of exercise as established by the exercise sciences must be adhered to if goals and objectives for physical fitness are to be achieved by exceptional individuals in physical education.

The components of physical fitness to be addressed in this paper are as follows:

1. Cardiorespiratory Endurance - The ability of the body systems to maintain efficient production and distribution of energy needs and removal of exercise waste products.

2. Muscular Strength - The ability of a muscle to exert a force or move a particular heavy weight one time.

3. Muscular Endurance - The ability of a muscle to repeat many times an activity which requires a level of strength.

4. Flexibility - The ability to move a particular joint in the body through its full range of motion.

5. Body Composition - The make-up of the body in lean body mass (muscle, bone, needed tissues and organs) and in fat mass.

The essential principles to utilize in exercising to develop and maintain the components of physical fitness are as follows:

1. Exercise Tolerance - Factors such as fitness level, health, age and developmental level of individual participants must be considered.

2. Warm-Up - The body should be properly prepared just before a vigorous exercise session.

3. Cool Down - The body should slow down gradually from a session of vigorous exercises.

4. Overload- An exercise session must be conducted at level vigorous enough or intense enough to cause changes.

5. Progression - The intensity, frequency and/or duration of each exercise session must be increased over a period of weeks and months to continue to show improvement.

6. Specificity - The type of exercise engaged in and the particular body parts involved must be selected to meet the needs of the specific component of physical fitness to be developed.

7. Regularity - Exercise sessions must be conducted at regular intervals daily, weekly and throughout the entire year to maintain or advance value gained from any physical fitness program.

8. Nutrition - The body requires appropriate quantity and quality of foods and a balance of caloric intake with exercise.

9. Sleep and Rest - The body requires appropriate quantities of sleep and rest at regular intervals.

10. Harmful Substances - Substances such as tobacco, alcohol and drugs will decrease the body's capacity to perform its minimum normal functioning and do physical activity successfully.

11. Recovery - The body requires an interval of time and periods of rest and sleep to recover from a vigorous exercise session. The amount of time needed for recovery is less for the physically fit person.

It is obvious that a significant amount of time and activity will be directed toward the development of a particular physical fitness component for health improvement and for sports, games or dance improvement. This should in no way detract from the need to teach the skills, strategies and rules of sports, games and dance in physical education. In addition, there are essential concepts and underlying knowledges that high school graduates should acquire through physical education instruction. These concepts are as follows:

1. Physical fitness is defined as the level of condition which allows the body to be active and healthy and the mind to be alert.

2. The right kind of physical activity can help people be more healthy and do things more effectively and more safely.

3. There are certain components of physical fitness which must be considered and included in a complete physical fitness program.

4. There are certain principles which must be followed in selecting activity for physical fitness purposes.

5. Physical fitness is basic to success in sports, games, dance and work but is different from skills or motor fitness.

6. It is important for everyone to know his/her own level of fitness in each of the components.

APPLICATION OF SELECTED PRINCIPLES TO UTILIZE IN EXERCISING TO DEVELOP AND MAINTAIN PHYSICAL FITNESS COMPONENTS

	Cardiorespiratory Endurance	Muscular Strength	Muscular Endurance	Flexibility
SPECIFICITY Exercise in a way to influence a particular component	-Raise the pulse rate. -Best accomplished through continuous rhythmic activities such as walking, jogging, cycling, swimming, skating, and rowing. Sports such as soccer, basketball, racquetball may help.	-Make particular muscular groups exercise against heavy resistance.	-Make particular muscular groups do repetitions of exercise which requires strength.	-Move joints through full range of motion by stretching -Use slow, static stretches, not quick movements.
OVERLOAD An exercise period conducted at a level vigorous enough by intensity and/or duration to get a training effect.	**Intensity:** -Raise the pulse rate to 60-90% of maximum pulse rate reserve. -Utilize 50-85% of VO^2 maximum. **Duration:** -Keep pulse rate up 15-60 minutes.	**Intensity:** -Use 70-80% of maximum resistance for each muscle group. **Duration:** -Do 4-6 repetitions in each set.	**Intensity:** -Use 40-60% of maximum resistance for each muscle group. **Duration:** -Do 8-15 repetitions.	**Intensity:** -Take each joint to maximum range of motion. **Duration:** -Go into each stretch slowly and hold 12-15 seconds. Repeat three times.
REGULARITY Exercise at regular intervals, each week, throughout the year.	**Frequency:** -Minimum of three days a week year round. Four to six days significantly better.	**Frequency:** -Minimum of two days a week year round.	**Frequency:** -Minimum of two days a week year round.	**Frequency:** -Daily, whether doing other exercise or not. Include as part of warm-up before vigorous activity. Repeat after activity for muscles used in that activity.
PROGRESSION Increases in the intensity, frequency, and/or duration over a period of time (weeks and month).	**Intensity:** -Go faster. **Duration:** -Go longer. **Frequency:** -Do the activity more times per week and/or per day. -Use combinations of intensity, duration, and frequency increases.	**Intensity:** -Use more resistance. **Duration:** -Do more sets. -Do the activity more times per week and/or per day. -Use combinations of intensity, duration, and frequency increases.	**Intensity:** -Use more resistance. **Duration:** -Do more sets. **Frequency:** -Do the activity more times per week and or per day. -Use combinations of intensity, duration, and frequency increases.	**Intensity:** -Move joint to greater range. **Duration:** -Hold the stretch longer. **Frequency:** -Do the stretches more times a day. -Use combinations of intensity, duration, and frequency increase.

THE GOVERNOR'S PHYSICAL EDUCATION LEADERSHIP TRAINING PROJECT FOR HIGH RISK YOUTH - THE OREGON STORY

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When talking about High Risk Youth in Oregon, we are not talking about kids with cardiac problems (although this, too, may be true for some of our population). The term "high risk" in the Oregon project refers to those kids that are demonstrating great potential for school failure and with that a chain of other events that spell RISK to the self-worth and future life success of these kids.

A recent study done in Oregon disclosed that a high percentage, about one out of three, potential high school grads in Oregon did not complete high school for one reason or another. Pretty scary situation, considering the repercussive effects that has on the economy and social service needs in the long term. Consequently, a search began for something that would change these figures. Perhaps remembering the good experiences of sport in his own life.....Governor Atiyeh assumed that sport programs might be the motivational key needed to keep these kids in school. With this notion, he went to the Governor's Council on Health, Fitness and Sport and charged them with developing something to help keep these kids in school. The Council on Health, Fitness and Sport was, of course, used to defining the the term "risk" in regard to cardiac risk factors, and what to do with alienated youth was not their forte. However, they did know enough about this population to realize that doing more of what was apparently not working in the first place.....making available lots of teams to avoid belonging to.....was probably not the answer.

Fortunately, the Council was familiar with the work of Don Hellison, a professor at Portland State University, who had been working with and writing about problem kids and physical education. In the spring of 1980, Dr. Hellison was contacted and met with the Governor. Dr. Hellison, the author of Beyond Balls and Bats: Alienated Youth in the Gym, affirmed the connection between moving and helping alienated kids. However, he was quick to point out that the process was a bit more difficult than just providing a multitude of organized sport choices.

Based on several years of teaching physical education to high risk adolescents in a variety of settings, he had developed a model using sport and exercise as an intervention medium for helping these youngsters become more involved in socially acceptable activities, more self-disciplined and self-directed, and more concerned about the rights and needs of others. In addition to the initial therapy model, Dr. Hellison had developed a wide range of strategies to help implement the model's goals.

By December, 1980, Dr. Hellison had accepted the challenge to establish a core group of people that would initially learn the model well enough to field test it in a variety of settings and then go out and share their experiences with others throughout the state. Dr. Hellison and the Governor's Council on Health, Fitness and Sport selected ten trainees with excellent credentials (e.g., all had teaching experience or experience with high risk youth). These trainees completed a series of seminars and individual meetings with Dr. Hellison which culminated in individually planned programs based on Hellison's model. Placements for field testing included two city schools, three alternative schools, two programs for emotional disturbed, one program for pregnant teens and young parents and one detention facility. The question of whether the model would withstand the demand of flexibility placed upon it by such a variety of settings, as well as the individual personalities of the trainees, was really put to the test. Reflecting back, the model did hold up and is certainly worth sharing with others.

In Hellison's model he creates what he calls behavior levels:

Level 0	Marginal Status
Level I	Involvement with Self-Control
Level II	Self-Direction
Level III	Helping
Level IV	Integration

Each level can be described in terms of specific behaviors, awareness and intentions. The progression is primarily based on complexity (what appears from experience to be progressively more difficult to teach successfully) and a particular value orientation (higher levels are more highly valued). The sequence may be altered as opportunities such as teachable moments arise. For example, Johnny who cannot stay on task with his fitness contract (Level II), that same day may participate in a cooperative game (a Level III activity) and do quite well.

Before going further with specific examples and for the sake of continuity, each of the model's levels will be discussed briefly. Starting with Level 0, this is where we initially encounter many high risk youth. This is a level that could be described as alienation from the accepted mainstream, an individual on the sideline. Some of the behaviors observed are as follows:

(1) Not involved, may appear confused, powerless;
(2) Heavy use of defense mechanisms (e.g., making excuses, etc.);
(3) Discredits (makes fun of activities that others find meaningful);
(4) Abusive (anti-social) verbal and/or physical acts.

Level I is the model's first step toward positive behavior change. It is here that the young person is encouraged to become involved. There is really only one (major) rule: Don't interfere with the rights of others. As few demands as possible are advised in order to help the young person move over the line from non-involvement to involvement. Involvement for the sake of play is totally acceptable and illustrates one end of the involvement continuum; whereas, practice, training, etc., may represent the other end. Moving individuals along this continuum is perhaps a sub-goal of the model.

Level II is the model's second step toward positive behavior change. At this level, the young person is asked to move toward self-direction. Obviously, one cannot self-direct his or her involvement if not involved. Therefore, Level II behavior seems to require that some success has been experienced at Level I before the young person moves on to what would appear to be a greater commitment. Self-direction is a life-long process; "There is no finish line." The focus at Level II is on improvement of behavior/skill rather than comparisons to norms (although norms can inform) and on constantly renewing one's sense of purpose (Am I doing this for fitness, for appearance, to develop play skills, to feel better, to prove self, etc.?). To move students from total teacher control through a series of contracts which can provide progressions for the goal of self-direction, and perhaps eventually to "open negotiation" (the ultimate in making and being responsible for one's own choices), seems to require much flexibility within the learning environment, not to mention the need for a democratic teacher personality.

Level III is intended to emphasize "higher" ethical awarenesses, intentions and behaviors such as cooperation and caring. Other concepts like empathy, pulling one's own weight, courage and justice may also enter into the experiences one has when operating at this level. Self-control is the least someone can do for someone else; caring is perhaps the most one can do. Cooperation (individuals working toward the same goal) falls somewhere between these extremes. Just as in Level I and Level II, it seems that Level III has a continuum of positions at which one can be when participating in group activities.

Level IV represents the model's highest hopes for its young people. It is at this level that the student demonstrates consistent behavior outside what was earlier described as marginal status. The young person appears to be consistently involved in acceptable activities, demonstrates an ability to be self-directed and is also sensitive and responsive to the needs of others. In addition to these positive behaviors being practiced inside the therapy setting (physical education setting or whatever), these behaviors, awarenesses and intentions are practiced in other avenues of the young person's life.

In theory the model is quite sound. Implementation techniques or strategies are, of course, the keys to its success. The following applications were used by trainers in various field testing situations.

Application No. 1 - High School, High Risk Kids, 9th-12th Mixed, Large Class

- P.E., 50 minutes, five days a week.
- Curriculum: Two days a week devoted to skills, students get exposure to new activities and instruction in skills; two days a week for lock-step fitness (teacher directed regimen) or contracts (student must meet self-direction requirements to be eligible for contracts); one day a week for project adventure activities, cooperative games or kids' choice.
- Procedure: No credit if they don't participate; five clean days earn the student the right to try a contract; a clean day is earned by being on time, having P.E. clothes on and not hassling anyone during that period and they participate.
- Progression of Contracts: Must pass a knowledge test of concepts to do a second level contract; contracts start out as short as four to six days; kids on contracts keep journals, instructor determines if the student is fulfilling his/her contract. If they are, they can continue; if not, they can modify the contract or come back to lockstep for a while.

Application No. 2 - Special School, Emotionally Disturbed, Ages 9-15

- P.E., 50 minutes, five days a week.
- Curriculum: Chosen to include activities that reinforce all of the behavior levels. Activities included: Swimming, frisbee, basketball, dance, cooperative games, group challenges, tumbling and group stunts. Students were also exposed to awareness/behavior levels; posters in gym used to reinforce concepts.

- Procedure: No dress requirements; participation earned points, daily report cards to show what levels the students thought they were exhibiting and express their feelings about that class, debriefing at the end of each class or in the middle if needed. Free days/time at the discretion of instructor. Contracts used for free activity choices.

Application No. 3 - Continuing Education for Young Parents (could have been co-ed, but was not), Small Class

- P.E., 30 minutes, twice a week for 12 weeks.
- Curriculum: Any physical education activity that teacher finds appropriate for the physical condition of the students and which allows for teacher/student interaction throughout class.
- Procedure: Begin with activities to motivate involvement/play. Major objective of first two weeks emphasizes simply involvement. Initiate self-direction and pro-social objectives about week three. Class days are designated as follows: Day A for skill development and Day B for group activities. Day A provides situations for choice making and goal setting. Individualized contracts can be used where appropriate. Day B focuses on activities to encourage cooperation, helping others, empathy, etc. (strategies included game invention, new games and initiative games).

  Note: More progression for self-direction can be provided about week eight by labeling a Day C as individualized program day. Students select their own activity program and are responsible for sharing a plan with the teacher and then following through on their own time. Participation in Day C not required for P.E. credit.

Application No. 4 - Detention Facility, Boys, Mixed Ages

- Personalized Combatives, two times a week.
- Curriculum: Personal defense skills, martial arts skills.
- Procedure: Group instruction to personal (individual warm-up mental imagery); reciprocal teaching; stations with teaching assistants, eventually with contracts; group discussion, if necessary, especially on self-control; journals.

As one can see, styles of implementation of the model vary. Some applications designate special days for concentrating on different levels; other applications try to touch on all levels each time the group gathers. Some applications require the students to acquire and use the language of the model's behavior level categories; other applications do not. Modeling of positive involvement, self-direction and pro-social behaviors are essential in all applications. Depending on the specific population, the facility to be used, the teaching resources, etc., the applications of the model's goals will differ. Regardless of the differences in programs, the consistency of the Oregon project is that the model goals remain the same. Young persons are encouraged to move from alienating behaviors, move from the sidelines into involvement. The young persons are encouraged and given opportunity to move toward self-direction. The young persons are given opportunity to interact with others in a pro-social manner which requires cooperation and caring for others.

Changes do occur. The Oregon Story has many examples to share. Perhaps one of the best changes we have discovered is in the attitudes of our peers as we share with them our experiences and the model's unique approach to teaching high risk youth. Changing one's own style in dealing with teaching problems is in itself risky business....but worth the try.

PORTLAND STATE UNIVERSITY
School of Health and Physical Education

THE GOVERNOR'S PHYSICAL EDUCATION LEADERSHIP

TRAINING PROJECT FOR HIGH RISK YOUTH

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THE A-B-C'S OF MANAGING BEHAVIOR IN PHYSICAL EDUCATION

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Physical educators must be taught basic techniques to deal with inappropriate behaviors which interfere with the learning process. Without this fundamental teaching competency, physical educators cannot teach physical and motor skills related to exercise, sports and dance (French & Jansma, 1982; Roice, 1982) and students cannot carefully and systematically learn what is supposed to be taught.

The seriousness of the problem is clearly depicted in a statement by Laurienzo (1977, p. 17) ".....teachers (physical educators) cannot even protect themselves, let alone hold orderly classes, let alone teach." This statement is supported by Park (1980, p. 52), who stated that, "Individuals (physical educators) considering teaching at the secondary school level should possess a realistic attitude toward the existence of discipline problems and be able to cope with them in a positive way."

At the national level, this problem has been recognized. The American Alliance for Health, Physical Education, Recreation and Dance (Hurley, 1981), in reference to preparing perspective teachers to manage behavior, proposed that future physical educators: (a) be able to apply various methods for developing appropriate student behavior and, (b) understand principles of motivation as they affect human behavior and promote motor performance. Only by incorporating these principles into their instruction will the physical educator be completely able to deal with behavior problems.

There have been numerous methods devised to develop, maintain or reduce a variety of student behaviors that have been successfully used by the regular and special classroom teacher since the early 1960's (Dunn & French, 1982). These methods can easly be adapted for use in physical education environments.

Most of these methods involve what we would like to call the A-B-C approach to behavior management. The physical educator using this behavioral management approach manipulates either an antecedent event and/or a consequence to affect a behavior. An example of antecedent event management might involve the teacher blowing her whistle which immediately causes the students to line up. On the other hand, consequence management might include increased free play contingent upon the emmission of an appropriate behavior by the student(s). An additional example of the A-B-C approach operating in physical education includes:

	Antecedent Event----->	Behavior----->	Consequence
	A - - - - - - - - - - >	B - - - - - - - - >	C
Pool:	Pool Door Left Open	Student Enters Illegally	Student Receives Demerit, Verbal and Nonverbal Admonishment

It is critical to repeat that according to this approach, B (Behavior) can be managed by A (Antecedent Event-stimulus) and/or C (Consequence-reward/punishment). In other words, behavior is a function of stimulus and/or consequence control.

Antecedent events which cause behavioral problems are usually associated with an inappropriate physical or social educational environment. Some of these environmental antecedents include: inadequate equipment, safety hazards (including unnecessary equipment and unlocked doors), crowded dressing conditions, and visual and temperature regulation distraction, poor equipment storage, inappropriate use of space, less than adequate activity selection, allowance of choice, lack of teacher physicalness, principal dependence by teachers, and use of a peripheral teaching position. In most cases the physical and social environment can be modified which will prevent the occurrence of numerous inappropriate behaviors.

If the modification of an antecedent event does not work and a behavior problem still occurs, there are numerous methods which involve the consequences of behavior that can be implemented by the physical educator. Some of these methods for consequence control include:

1.	Behavorial Contract:	A written agreement between at least the teacher and student which specifies what each person will do related to a target behavior for a specific period of time.
2.	Group Consequences:	A method which requires students to manage each others' behavior in order to increase the probability that they will each be reinforced.
3.	Premack Principle:	A method based on the principle that one behavior (low frequency) can be reinforced by the opportunity to engage in another behavior (high frequency).
3.	Token Economy:	An individual or group of individuals are reinforced with tokens (usually not rewarding in themselves) that can be earned for a specific behavioral response which, in turn, can be traded in to purchase some preferred item or activity.
5.	Punishment:	The administration of an aversive consequence or withdrawing a positive reinforcement in order to reduce the probability of the reoccurrence of an inappropriate behavior.

6.	Response Cost:	A technique generally used in a token economy that requires the student to lose some privilege or points that have already been earned.
7.	Satiation:	The loss of effectiveness of a reinforcer when it is given in excessive amounts.
8.	Deprivation:	A method based on the premise that effectiveness of a reinforcer can be increased by depriving or holding back a desired reinforcer.
9.	Time-Out:	The immediate withdrawal of a student from a reinforcing situation when a student emits an inappropriate behavior.
10.	Extinction:	The withholding of the known consequence that maintains or increases an inappropriate student behavior.

Although each of these methods may not work in every situation, the physical educator must be skilled in using several alternatives.

In summary, the A-B-C approach to behavioral management is very effective and has been widely used for decades by classroom teachers. For a physical educator to teach and for their students to learn, these methods must also be incorporated into the daily physical education instructional program.

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PEOPEL Partners: Peer-Teaching in Physical Education for Exceptional Learners
(P.E. Opportunity Programs for Exceptional Learners)

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The PEOPEL Project was developed to help schools meet the needs of both handicapped (exceptional) and non-handicapped students through peer-tutoring in a success-oriented physical education experience. PEOPEL is designed for students who because of some physical, mental, social or emotional condition will benefit more from an individualized program than from general physical education. Through individualized learning in physical education, students develop mental, social, emotional and physical abilities at their own pace. The emphasis on the individualized learning of a variety of physical activities is possible by utilizing peer-tutors, called PEOPEL student aides, who have completed a special training/orientation class and are under the direct supervision of the physical education teacher. This provides a one-to-one instruction ratio in a coeducational setting with up to 30 students per class (15 exceptional learners and 15 student aides). Each student experiences fun and daily success in a variety of individual, dual or team activities. The organization of PEOPEL classes is similar to that of general education classes. In addition, students are pretested to determine entry skill level based on performance objectives within the Unit of Instruction. The PEOPEL *Teacher's Guide* has 35 separate Units of Instruction which were developed with task-analyzed performance objectives. Unit of Instruction Performance Objectives are included for history, basic rules, etiquette, terminology, safety and skill progressions. Other PEOPEL materials are the *Administrative Guide* and *Student Aide Training Manual*.

PEOPEL inservice training is designed to assist physical education teachers and staff in implementing the peer-teaching components of PEOPEL within their school. Training encompasses both administrative and instructional considerations, as well as short and long-term planning.

Peer-teaching in PEOPEL enables each student to realistically receive individualized physical education experiences based on special needs. PEOPEL meets the intent and requirements of the physical education components of Public Law 94-142.

PROJECT HISTORY

PEOPEL was initiated in 1974 at West High School, Phoenix Union High School District, Phoenix, Arizona, to serve as a cost-feasible, effective program for providing an individualized physical education experience for handicapped students. PEOPEL was funded through an ESEA, TITLE III Project in cooperation with the Arizona Department of Education, as an innovative program in physical education.

During the first three years, PEOPEL curriculum and administrative materials were developed, reviewed, field-tested and revised. These materials include the PEOPEL *Administrative Guide*, *Teacher's Guide* and *Student Aide Guide*. By 1977, PEOPEL had been implemented in ten Phoenix high schools.

In March, 1977, PEOPEL was reviewed and approved as a State Validated Project which met or surpassed established goals and objectives. Following this validation process, PEOPEL worked cooperatively with the Arizona Department of Education to conduct workshops throughout Arizona for teachers and administrators interested in physical education for the handicapped.

In March, 1979, PEOPEL was reviewed and approved by the Joint Dissemination Review Panel, Washington, D.C., as an exemplary, innovative, cost effective and exportable program. As a Nationally Validated Physical Education Opportunity Program for Exceptional-Handicapped-Learners, PEOPEL is now available for adoption by schools which have an identified need for a physical education program for the handicapped and wish to implement the peer-teaching components of PEOPEL.

PROGRAM CONTENT

PEOPEL differs from the regular high school physical education program in two respects: 1) the use of trained student aides (peer-tutors), and, 2) individualized instruction and learning.

Student aides are recruited and screened prior to enrolling in a one semester Physical Education Careers Class which provides the necessary training. Upon successful completion of the training class, the students are assigned to PEOPEL classes where they serve as peer-tutors to provide individualized instruction based on task analyzed objectives. Thus, PEOPEL is truly mainstreaming. Half of each class is made up of exceptional learners and the other half is made up of student aides. Handicapped and non-handicapped students are in direct association while participating in all physical education activities.

The second feature of PEOPEL is its emphasis on individualized instruction. Individualization is accomplished through student aides, under the supervision of the instructor, using the special materials developed and refined by the PEOPEL staff during the first three years of operation. These materials are the Teacher's Guide, the Administrative Guide and the Student Aide Training Manual. PEOPEL materials and procedures are organized and presented in a sequential, development and success oriented manner. In this way, the students are provided the opportunity to develop individual motor abilities and acceptance of self.

PEOPEL has been developed with exportability as a major concern. PEOPEL requires no additional facilities or equipment beyond that which is available at the individual school.

PUBLIC LAW 94-142 EXPLANATION

PEOPEL meets the requirements and intent of Public Law 94-142 by providing a specially designed physical education program for students with special needs in physical education. Public Law 94-142 states that physical education, specially designed if necessary, must be provided for handicapped students (a school which offers physical education courses shall provide to handicapped students an equal opportunity for participation in physical education). PEOPEL provides this program in the least restrictive environment with benefits for the exceptional learner and peer-tutor. Physical education, as taken from the law, means the development of: 1) physical and motor fitness, 2) fundamental motor skills and patterns, and, 3) skills in aquatics, dance and individual and group games and sports.

The positive challenge in physical education is to: provide a program of activities which is as similar to the general physical education program as possible; provide a program on an equal basis with the program for non-handicapped students; provide a program as a meaningful part of the total physical education program and taught by physical educators; provide a program in which the handicapped and non-handicapped students are together in the physical education class and provide activities which will meet the short and long range needs of the students. Through peer-teaching, all of these challenges can be met and accomplished in PEOPEL classes.

PEOPEL GOALS AND OBJECTIVES

The major goals are: 1) to provide students with special needs in physical education an equal opportunity for the health, social and recreational benefits of physical education through individualized instruction and learning made possible by using student aides, and, 2) to train other school districts to replicate key elements of PEOPEL using local resources to meet local needs.

The objectives are: 1) to establish the effectiveness of PEOPEL with respect to student levels of physical fitness and attitude improvement toward physical activity, 2) to establish the compared effectiveness of PEOPEL with traditional adapted physical education without peer-teaching, and, 3) to establish the effectiveness of PEOPEL when transported to other locations.

STUDENT EVALUATION

PEOPEL students improved significantly in physical fitness levels from year to year. Students enrolled in traditional adapted physical education classes without peer-tutors did not improve significantly in physical fitness. The physical fitness measures included components of strength, flexibility, endurance and agility.

PEOPEL students improved significantly in attitudes toward physical education and activity. Students enrolled in adapted physical education without peer-tutors did not improve in their attitude toward physical education and activity. The attitude measure was a modification of the Wear's Physical Education Attitude Scale.

Student aides/peer-tutors also were requested to complete attitude surveys about their expectional peers. It has been demonstrated that student aides have a better understanding of, appreciation of and attitude toward handicapped students following their experiences as peer-tutors.

STEPS FOR STARTING PEOPEL IN YOUR SCHOOL

Once a school identifies the need for and benefits of a PEOPEL program for the students in that school, the steps for starting PEOPEL are quite simple. First, contact the Phoenix PEOPEL Project directly (2526 West Osborn, Phoenix, AZ 85017, (602) 251-3867), or contact your State Facilitator for the National Diffusion Network, Department of Education.

PEOPEL will work with you and your school to provide the necessary materials and staff training to assure a successful PEOPEL experience for your students.

HORSEBACK RIDING FOR THE HANDICAPPED

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Horseback riding for the handicapped, often referred to as therapeutic riding for the handicapped, is designed to be a form of treatment in improving many physical functions as well as the mental and social state of the handicapped student.

The primary purpose of the program is rehabilitative, not recreational. Therefore, particular emphasis is placed on identifying each student's needs and goals. This is accomplished by combining the expertise of the medical doctor, the registered physical therapist and the instructor in designing an individual plan for every student. A purely recreational program, although usually fun for the student, is not designed to promote rehabilitation and, in many cases, is, in fact, contra-indicated by the medical advisors as the risk element is far greater for the student than when careful and knowledgeable planning has preceded the thrill and challenge of horseback riding.

Therapeutic riding has been a recognized and viable treatment model since World War II. Handicapped programs are ever increasing in size and effectiveness in most major European countries as well as the United States. New Zealand and Australia have now joined the ranks of foreign countries with these unique programs.

There are presently twenty-six accredited therapeutic riding programs throughout the United States. Their structure and format range from once a week programs for only six to eight students to a well-established program which serves over 200 students per week, provides a training course for prospective instructors and has a complete physical plant facility which includes an indoor ring, an excellent school of horses, restrooms and two classrooms.

Regardless of the number of students and physical set-up, the intent of every program is the same: to provide handicapped children and adults with the unique experience and benefits of a riding program designed to meet their special needs.

Many components become apparent in determining the effectiveness of a therapeutic riding program. Posture improves through the use of trunk muscles (both back and front). The progression of gaits from walk to trot to canter provide an excellent exercise to improve balance. This is of special benefit in promoting relaxation in the spastic and athetoid student. Articulation in the spastic and athetoid student is freed because the legs hand alongside the horse and do not support the weight of the torso. The rhythm and motion generated by the horse are localized in the pelvic area, thereby furthering the degree of relaxation. Improved coordination, perception and identification through planned exercises and games are realistic goals for learning disabled as well as other handicaps.

Progression is the goal of all rehabilitation. Therapeutic riding is no exception. As soon as the student has learned to direct his horse, assistants who lead the horse and walk alongside the student are eliminated. Games and exercises continue to be a part of each lesson, primarily for the purpose of preparing the student to learn riding skills to the limit of his ability.

Independence for the physically handicapped and orthopedically handicapped can be achieved more quickly on the horse than in a wheelchair or on crutches. This level of progression has been observed to carry over into other areas of the student's life.

The climate of horseback riding offers new values and challenges as well as the sheer delight experienced by the student when he learns he can participate. The loving and caring relationship that the student invariably establishes with his horse, increases his self-esteem to the extent that he is much better prepared to meet and deal with his situation "on the ground." With his self-image enhanced, his coping skills improve.

There are not many other situations we can create for our handicapped population that enable them to be as "normal" as the nonhandicapped. When riding a horse, the handicapped student really is like everyone else and better than some.

Everything that surrounds horseback riding; the saddling of the horses, their feeding and grooming, the names of their parts, their size and color, sweep students into the "game." They love the tool of their rehabilitation. The horse is a live tool that the student learns to identify with and in the process thereof, learns control and coordination of his own movements and actions through understanding and following instructions. Now, learning takes on a broader perspective for the student as he must communicate effectively to attain the greatest response from his faithful, but nonverbal, four-legged friend.

Improved eye contact, inter-personal communications and appropriate behavior are only the beginning of a long list of accomplishments to be attained by the emotionally disturbed or mentally retarded student.

A residual benefit of the therapeutic riding program is for the parents of a handicapped student. Equestrian traditions bear romantic and exciting marks of fox hunting, long cattle drives and world olympic competitions. Many people consider riding a "high risk" sport. This impression is carried over to therapeutic riding programs as well. Therapeutic riding, by necessity, is far more concerned with the safety measures for each rider; but to the parents, the glamour transcends and they feel proud of their child's accomplishments. This is shared with family and friends. Renewed interest, resulting from achievement, often sparks new courage to deal with the "day to day" routine of the handicap.

REQUIREMENTS FOR A THERAPEUTIC RIDING PROGRAM

1. Riding facility to include:
    a. Enclosed ring and accessible trails
    b. Horses and ponies of different sizes, sound of limb, good dispositioned and thoroughly trained
    c. Restroom facilities
    d. Classroom area
2. Equipment to include:
    a. English saddles and bridles in good repair, halters leadlines
    b. A safety helmet for each student while riding
    c. Safety belts
    d. Caveletti
    e. Equipment for therapeutic games
3. Staff to include:
    a. Program coordinator, assistant coordinator, business manager
    b. Registered physical therapist
    c. Qualified instructors trained in the special needs of the handicapped
    d. Trained paraprofessionals to act as leaders and helpers
4. Other:
    a. Insurance (liability and accident)
    b. Membership in the N.A.R.A.H. (North American Riding for the Handicapped Association, Inc.)

A SCIENTIFIC APPROACH TO TRAINING THE QUADRIPLEGIC

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SUMMARY

The physiological responses to armwork have been studied quite extensively. Several of these studies have used high-level spinal cord injured individuals, or quadriplegics, in prolonged training programs. The results of these studies have indicated that work capacity cannot be improved in these subjects, due to cardiovascular limitations and pronounced muscular paralysis imposed by the injury (Ekblom & Lundberg, 1968; Knutsson et al., 1973). Power overload training, which has been shown to produce significant improvements in the able-bodied population (Hellebrandt & Houtz, 1956; Mastropaolo et al., 1977; Mastropaolo & Takei, 1981; Mastropaolo, 1982) has not been utilized with quadriplegics, and thus was the training program used in this study. It was the purpose of this study to train quadriplegics upon an armcrank ergometer to determine if power overload training would produce significant improvements in ergometer power and wheelchair racing.

Six cervical cord injured quadriplegics were trained three times per week for eight weeks on an armcrank ergometer after ergometer power values and wheelchair racing times were determined at .3, .7, 1.0, 2.0 and 4.0 minutes and 60, 100, 200 and 400 meters, respectively. The training consisted of thirty bouts of maximal exertion on the armcrank ergometer for .3 minute, spaced by .7 minute rest. Training was a replication of the power overload training protocol devised by Mastropaolo et al. (1977).

The results of the testing and training indicated significant improvements in group peak power at 1.0 (40%), 2.0 (29%) and 4.0 (22%) minutes. Significant improvements in group mean spectral power were also observed at .3 (18%), 1.0 (39%), 2.0 (32%) and 4.0 (26%) minutes. For the two subjects that raced at all four distances, one subject improved at 60 (7%), 100 (13%), 200 (15%) and 400 (22%) meters, while the other subject improved slightly at 100 meters (2%). Essentially no changes in racing performance were observed for the two subjects who raced 60 meters.

The results of this study are in agreement with Mastropaolo's unpublished observation on one quadriplegic and in disagreement with previously published findings (Ekblom & Lundberg, 1968; Knutsson et al., 1973). It appears that the cardiovascular and muscular limitations of quadriplegics are not the limiting factors in training, but rather by the limitations of the training program imposed on these subjects. The significant improvement in power output appears to be the result of the power overload training program devised by Mastropaolo et al. (1977).

Of the four subjects that elected to race on the track, only one subject improved at all four distances. One explanation for this could be a lack of improving a motor coordination or motor learning component of wheelchair propulsion while armcranking. For all subjects, an increased ability to perform

activities of daily living was observed after training. Although significant improvements in power were observed for armcranking, this motion may not totally resemble wheelchair propulsion. It appears that power overload training needs to be performed using quadriplegics on a device that stimulates wheelchair propulsion.

Conclusions

It has been shown in this study that quadriplegics with complete, as well as incomplete, paralysis can significantly improve in power output in armcranking as a result of power overload training. It seems that quadriplegics are not limited by restrictions in the cardiovascular and/or muscular system, if introduced to a training program that significantly taxes those systems. Power overload training appears to be that program.

Of the six subjects in the study, four elected to race on the track. Of these four subjects, one improved in racing time at all four distances. It appears that armcranking may not be as effective in producing a significant gain in wheelchair racing performance as a device that simulates wheelchair propulsion. A power overload training program using a device that simulates wheelchair propulsion needs to be performed. This could have implications regarding quadriplegics in rehabilitation as well as in competitive athletics. This area is in definite need of further research.

The results of this study do not support the negative opinion developed from previous research regarding quadriplegics during training.

Implications for Further Study

Due to the high within subject variability even in this population, it appears that there is a need to separate subjects based upon fitness levels. A criterion for this separation may be to divide subjects by those who propel themselves manually from those who are confined to electric wheelchairs.

Based upon the findings of the wheelchair racing, these subjects may need to be trained on a device that simulates wheelchair propulsion. Because power overload training has produced significant gains in power in armcranking, this training program should be applied to this wheelchair ergometer, so that the motor coordination or motor learning component mentioned previously might be satisfied. Also, there appears to be the need to control subjects for practicing wheelchair racing outside of the laboratory, to eliminate the bias that this may produce.

Because of a fatigue factor that was reported by several of the subjects during the testing, the determination of peak power may need to be modified to enable peak power values to be achieved without the bias imposed by the ever increasing progression of loads in the testing. This could be done by having the subjects return to the laboratory after the power curve has been determined, select the loads that produced the highest values of power and attempt them without the progression of loads that may cause this fatigue.

PHYSICAL ACTIVITY FOR THE EXCEPTIONAL INDIVIDUAL
INVOLVEMENT AND PARTICIPATION

THE ROLE OF THERAPISTS IN AN INTERDISCIPLINARY PROGRAM

Lorna Jean King, OTR, FAOTA

All the professionals involved in providing physical activity programs for exceptional individuals have common goals. Broadly, they are:

1. Assisting the exceptional individual to attain or maintain optimal physical function.
2. Assisting the exceptional individual to attain or maintain optimal mental function.
3. Assisting the exceptional individual to attain or maintain satisfactory and personally rewarding social relationships.

If all professionals have the same goals, then are the services interchangeable? Do the physical educator and the recreational therapist have different roles from those of the physical therapist and occupational therapist? How can these various professionals work together harmoniously in an interdisciplinary team without duplicating services and functions?

I cannot speak to the roles which physical education professionals and recreation therapists see for themselves, but perhaps I can do as I have been asked, and delineate the possible functions of occupational therapy and physical therapy.

A major difference in roles can be deduced from titles, one would expect the physical education specialist to deal in a process of skill building - facilitate the learning of specific physical competencies. The other three professions which share the term "therapy" are by definition concerned with the remediation of defects, either innate or acquired.

The physical therapist probably has the most in-depth training in pathological conditions of muscles and joints and their remediation. Perhaps one of the roles of the physical therapist can be to advise the other professionals on the team about precautions - types of activity to be avoided. The Hippocratic code admonishes "physican, do thy patient no harm." And all professionals who are trusted by their clients should repeat this admonition to themselves. For example, running and jumping are not to be recommended for clients whose tight hamstrings are alreading limiting movement at the ankle. In another area of disability, strenuous physical activity often triggers an asthma attack in asthma-prone children.

The occupational therapist is trained in the protection of the patient with disabilities of the upper extremities, in particular. The arthritic individual should avoid activities which result in ulnar deviation of the hand--tightening jar lids for example. Playing cards would not be a good activity for an arthritic as holding the cards and suffling would involve unlar deviations and shortening of the intrinsic muscles of the hands.

Therefore, one role of physical and occupational therapists in planning activities for the exceptional individual is a preventive one - advising the team about precautions which are appropriate in working with various clients.

It is not only important to guard the client from physical harm but also from emotional damage. Failure is a source of stress which is rarely, if ever, therapeutic. Therefore, another facet of a therapist's evaluation should be the delineation of areas of competency which can be used to predict activities at which the client can have a successful and gratifying experience.

For example, a child whose one foot standing balance is poor is probably not going to have a successful experience playing soccer, but might succeed at archery.

The individual who cannot smoothly track a moving object visually is probably going to have difficulty fielding a soft ball successfully, but might do well at badminton where the bird moves relatively slowly.

To summarize the foregoing, we could predict that have physical and occupational therapists on the team can help to prevent harm and ensure a success experience for the client.

At a more basic level the occupational and physical therapists can assist the team in identifying and remediating deficiencies so that the exceptional individual can participate more successfully. This is particularly important with the mildly impaired individual whose problems may be subtle but important. A mid-line crossing problem, for example, may disrupt movement patterns involved in work or sports, but may be missed if one is not familiar with the problem or means of identifying it. Teenagers are often the victims of these "hidden handicaps" which often characterize the delinquent or "acting out" youth.

Another function of the inter-disciplinary team to which the occupational therapist and physical therapist can contribute is goal setting. At the outset a decisions should be made as to the primary aim of physical activity for the exceptional individual. Is the goal to maintain a level of function and prevent deteriorations?

Is the goal remediation or rehabilitation or is the major goal to improve the quality of life for the exceptional individual? These goals are by no means mutually exclusive, but defining priorities is important in preventing staff frustration as well as in providing appropriate activities for clients.

Staff education and client education are legitimate functions for all team members including physical and occupational therapists. The client needs to understand why physical activity is important to his well-being. Client education can include the physiological and psychological benefits of activity. Staff education can include training in methods of approaching the inactive or minimally active client in order to gradually increase activity level. "The art of therapy is to entice, not coerce."

In summary, the physical therapist and occupational therapist can contribute to a team approach to activities for the exceptional individual. They can advise on precautions to prevent harm, can help delineate activities at which the client can succeed, can help in setting appropriate goals for each client and can assist in staff and client education.

THE PHYSIOLOGICAL IMPACT ON PHYSICAL ACTIVITY
ON
PSYCHOLOGICAL CONDITIONS

Lorna Jean King, OTR, FAOTA

The concept of psychosomatic disorders is very familiar to most Americans, however, the idea that physical conditions affect psychological status has received much less attention until very recently. These effects range from the obvious to the unexpected.

It seems obvious that a painful chronic physical disability is likely to produce a certain amount of depression and anger, but who would have guessed that an imbalance in an obscure element like lithium could cause the violent cyclic mood swings that used to be called manic-depressive psychoses. The new name reflecting the new knowledge is "lithium sensitive disorders."

Even less known to the general public is the fact that physical activity can have marked effects on psychological status via recently discovered neuro-physiological mechanisms.

The first effect of movement to be discussed here is its role as an organizer of cognitive functions. Proprioceptive input to tendons, joints and muscles, and input to the balance centers in the inner ear comprise a tremendous amount of the total sensory input which a normal person receives. Visual and auditory input, though much more in conscious awareness, are relatively minor in quantity. Sensory deprivation studies indicate that confusion, disorientation and memory loss follow sensory deprivation and that movement deprivation is the most disrupting. This fact has important implications in the management of the elderly.

A second important effect of physical activity is its role in regulating oxygenation. Oxygen metabolism not only interacts with acetycholine reactions to govern memory and thought processes, but also has strong effects on mood. Oxygen is a mood elevator and, therefore, any physical activity which markedly increases oxygen intake is going to improve mood. This is probably why activities like running, playing handball, etc., can be characterized as "positive addictions: -- Glasser's term.

Oxygenation is also affected by posture. In the handicapped or elderly a caved in chest resulting from poor positioning in bed or chair can significantly impair oxygen uptake. The results can be depression, apathy, confusion and general deterioration.

The antidote is first of all good position and, secondly, movement of the arms to increase lung capacity. Reaching up for a balloon is a start. Physical activity may start in a very small way, but can still be effective. And it is self-perpetuating -- as the individual gets more oxygen he will feel better and will be more motivated to move. A third important effect of physical activity is its role in the metabolizing of stress hormones. From an evolutionary standpoint humans were engineered to respond to simple stressors -- crises where the appropriate response was to run or fight. The crisis triggered a flood of stress hormones -- the corticosteriods -- to the brain. The resulting physical activity -- fighting or running -- metabolized the stress hormones so that by the time the crisis was over, the stress hormones were for the most part broken down and were harmless.

Today, however, relatively few stress situations require fighting or running, but the stress hormones flood into the system just the same. Lacking physical activity to break them down, they remain in the system, triggering ulcers, high blood pressure and other stress related ills. These ills, scientists now tell us, probably include producing serious imbalances in the neurotransmitter chemicals. These imbalances may actually result in psychotic symptoms.

Therefore, in our modern world where stressors come in a greater variety than ever before, physical activity becomes more important than ever before as a means of keeping the organsim in biochemical balance. The exceptional individual is under stress simply by virtue of his exceptionality and often, ironically, the persons who need movement the most are the least able to move. The role of the physical activity team in working with the handicapped can actually be a life saving one. "To live is to move."

We cannot end our catalogue of the effects of physical activity without mentioning its role in the development of body concept and the processing of sensory data and producing an appropriate motor response. Sensory integration can be defined as the data processing functions of the brain -- the process of combining inputs into information. This processing function takes place largely in the brain stem and seems to depend for efficiency on the total available quantity of sensory input. Since input to the vestibular system and the other proprioceptors is quantitatively very important in this process, it follows that physical activity, which stimulates these receptors, is very important in combining inputs into information.

For the exceptional individual there are many stumbling blocks to physical activity, but there are also many rewards which make the effort worthwhile.

A SECONDARY THERAPEUTIC EXERCISE PROGRAM FOR THE MODERATELY DISABLED HEAD INJURED* INDIVIDUAL

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Basically, a person's entire ability to function in the world depends upon the brain. Brain cells are nerve cells that control our muscular movements, sensations, speech, thinking and memory. When brain cells fail, the body parts they control cannot function. After a brain cell is destroyed, no reserves wait to take its place.

The etiology of a person with a brain injury may be the result of one of the following: (1) trauma to the head, (2) inflammation and/or infection of the brain, (3) tumors, (4) cerebral hemmorhage due to either hypertension or thrombosis, or (5) a degenerative brain disease. Whether the resulting disability will be temporary or permanent, mild or severe, depends upon how widespread the nerve cell damage and how effectively the body can repair the blood supply to those areas.

While many diseases and injuries cause neurological impairments, the impairment itself does not depend on the nature of the lesion but only on its location within the brain. A disability and its management will be the same regardless of the cause of the damage. This damage to the brain may result in permanent hemiplegia or hermiparesis which will necessitate physiotherapy. Rehabilitation is definitely needed if the head-injured persons are to maximize their residual capabilities.

The rehabilitation process, after brain damage, has attracted little attention from either basic or clinical scientists who seem most concerned with the acute stage. Much of the research done on the recovery stages of a brain injury have been done by disciplines outside neurology, and much more research is needed to improve the recovery rate of brain-injured persons. The area of rehabilitation is an open field that needs further research with regard to the brain-injured individual and that it should vary from purely laboratory research to research that has practical applications, such as in the gymnasium. (See sample lesson plan)

In a real sense, rehabilitation begins the moment someone has incurred a head injury. The primary goal of rehabilitation is to prevent complications. It is realized early in the rehabilitation process that the framework for the development of strength, endurance, balance, coordination and flexibility must be set. Rehabilitation has special application to the neurologically impaired individual by improving both body image and spatial awareness concepts while affording an opportunity for success. If the proper beginnings are not made, adequate readjustments may be impossible at a later date.

*Moderately Disabled Head Injury is defined as independent yet disabled. These individuals manifest memory deficits, personality changes, hemiparesis, dysphasia, ataxia, post-traumatic epilepsy or major cranial nerve deficits.

Frequently, brain-injured clients are resistant to physical and mental activity on the basis that it aggravates headaches, cuases dizziness, or fatigues them. Research has shown that exercise will not aggravate such conditions and may possibly eliminate them altogether. While the patients' disability may prevent them from participating fully in the swimming pool or in the gymnasium, it is considered valuable for them to spend at least thirty to sixty minutes daily in such activities to increase their strength and endurance and redevelop their coordination. The time spent partaking in exercise, swimming, and/or sports activities is not only valuable physically, but is also psychologically stimulating.

Traditional exercise programs from hemiplegic patients have consisted of range of motion exercises, ambulation and activities of daily living. This approach usually consists of one therapist with one patient. It has not been until recently that group exercises to teach balance and self-range of motion have been employed with hemiplegics. Working in groups is an effective and economical way to treat hemiplegics provided that their progress is monitored regularly and the exercise carefully graded.

The hope of an Adapted Physical Education Program for the head-injured is to allow the individual the opportunity to attain the highest level of functional ability possible. If this is to occur it is then of extreme importance to relate to each student as an individual and to react to their personality rather than to their disability. In doing so, the student will enhance his or her feeling of self-worth.

Since the head-traumed population is both growing in numbers and receiving greater attention yearly, it becomes imperative that both traditional and non-traditional methods of rehabilitation be explored if these individuals are to maximize their potential. Therefore, from both a humanitarian and economic point of view, head-injured persons constitute a large and important group of people. This is a fact which emphasizes and necessitates an effective post-hospital treatment plan which Adaptive Physical Education Programs at the community colleges are capable of handling.

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SAMPLE LESSON PLAN

Text: Jack Capon, Elementary PE; Perceptual Motor Lesson Plans

FIRST WEEK

Major Goal - Balance, Flexibility and Coordination

	Activity	Objective	Description
+ 1)	Name body parts	Body image	Touch specific body parts
+ 2)	Balance beam walking	Balance laterally	Walk beam while looking: hold instructor's hand
+ 2A)	Balance beam walk while holding ball in front	Dynamic balance, bilaterality	
✓3)	Hopping	Balance, gross coordination	Hop on right and hold Hop on left and hold
✓4)	Crawling	Gross lateral coordination, kinesthetic awareness, flexibility	
+ 5)	Criss-cross walking (over line)	Foot-eye coordination, laterality, visual motor	
+ 6)	Ball bounce	Hand-eye coordination, memory sequencing	Bounce once in Hoop #1 Bounce twice in Hoop #2, etc.

Games

A. Ping-pong bounce relay
B. Bounce off walls and change hands; turn around
C. Bounce off paddle without losing control; walking and bouncing forward, backward and sideways

Subjectively evaluate lesson plan.

Good + Fair ✓ Didn't work -

THE REGULAR PHYSICAL EDUCATOR AS A FACILITATOR FOR ADAPTED PHYSICAL EDUCATION: A FIELD CONSULTANT TRAINING MODEL

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Inservice training programs during the last five years have emphasized the skills necessary for regular teachers to accommodate special students in mainstream education. While many of these training programs are successful in aiding teachers to adapt learning activities for the special student, few are of the intensity to provide support through a close relationship with teachers and other school personnel. This is due to the fact that most inservice training is conducted by "outsiders" such as university faculty, regional consultants, or district staff developers.

The inservice needs of physical educators who work with special children are particularly intense because of the environment in which physical educators function. First, physical education is often the first curricular area in which a special child is mainstreamed. Second, the physical educator rarely provides input to the individualized Education Plan (IEP) regarding the motor activity needs of the child. Third, most regular physical educators serve hundreds of different students each week. Fourth, a number of other educational personnel provide motor programs for students. These include physical therapists, occupational therapists, special education resource teachers and nurses. There is seldom systematic communication among these professionals.

Given the unique role of the physical educator in serving the needs of special students in the mainstream, a field consultant training program was designed. The program is based on the premise that just as students have individual learning needs, so teachers, schools and districts are different in their needs for improving the quality of their physical education services to special students. The program also focuses on the provision of training by master teachers who function within the school system where coordination occurs. The ultimate goal of the field consultant training program is to improve the quality of the physical education program in three areas:

1. long-range program planning;
2. assessing student needs;
3. designing appropriate instructional and organizational techniques based on student needs in mainstream physical education.

This goal is accomplished by providing demonstration teachers in physical education with the skills for developing and implementing relevant inservice programs to improve the quality of the physical education services for special students. A concept which is critical to the successful implementation of this training program is that concerns identification, resource development, collaborative planning, and evaluation are ongoing concurrent events which enhance the provision of full educational services to all students. Although the specific focus of this training effort is to assist teachers and other personnel in improving the quality of physical education services for special students, the field consultant skills are generic to personnel development programs in any curricular area.

The Field Consultant Training Program

Criteria for Entering the Program

Teachers selected as field consultant trainees meet the following criteria:

1. knowledge of individualized instructional techniques and handicapping conditions;
2. skill in individualizing instruction with special students in mainstream physical education as evidenced by university staff observations and focused interviews;
3. concerns about collaborating with other teachers as reflected by a concerns questionnaire.

Field Consultant Roles

The roles in which the field consultants are to function are adapted from Zigarmi, Amory and Zigarmi (1979). These roles include counselor, resource broker, advocate, monitor/advisor and demonstration teacher. The consultant never functions as an "expert" or supervisor but as a peer who has the additional responsibility for coordinating inservice efforts developed to meet all students' needs as they exist within the local district.

Training Procedures

The field consultant training program includes three full days of training along with two on-site and ten telephone follow-ups across a four month span of time. The training program focuses on the following skills:

1. selecting goals and planning the process of program improvement;
2. assessing teacher/personnel needs and concerns;
3. designing appropriate interventions to address identified needs and concerns.

At the end of the first three days of training, each field consultant has developed a written plan of action for program improvement called a game plan. This game plan reflects an initial general assessment of local needs and concerns. It also has been scrutinized by the appropriate administrators to determine it feasibility and its correspondence to local program goals. The game plan is the overall plan or design for implementing the change or improvement effort. It encompasses all aspects of the implementation effort, lasts the full time period of the change process and affects all persons who are directly or indirectly involved.

Follow-Up Activities

During the four months following the initial three day training, university staff contact each field consultant on a weekly basis. While two of these contacts involve visits to the consultants' field site, all other contacts are made via phone. In the follow-up conversations, the field consultant relates all activities, events, and planned interventions that impact the quality of the physical education program. The university staff member, in turn, provides feedback to the field consultant regarding the progress of the game plan activities and provides support for continuing interventions.

Conclusion

This paper focuses on improving the quality of physical education by training teachers to assume leadership roles as field consultants in their districts. The ultimate goal is the provision of appropriate physical education special students.

TRAINING PROGRAMS FOR IMPROVING STRENGTH AND CARDIOVASCULAR FITNESS OF QUADRIPLEGIC AND PARAPLEGIC ADULTS

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When a disability results in quadriplegia or paraplegia, developing and maintaining levels of muscular strength and cardiovascular endurance are essential in facilitating independent living skills and preventing disuse syndromes (e.g., muscle atrophy, cardiopulmonary insufficiencies, contractures, osteoporosis). Because most physically disabled adults cannot train using conventional methods, current research is attempting to elucidate the most effective testing protocol, training techniques and equipment to meet their unique needs. Furthermore, studies have conclusively demonstrated that physical training has a positive effect on the physiological functioning of the adult paraplegic.

In order to design a beneficial and safe training program, Adapted Physical Educators need to become familiar with techniques and modified equipment for testing and training, as well as the special needs of the quadriplegic and paraplegic adult. The following slide presentation and accompanying handouts will provide the professional with some of this information.

Strength Training

One of the most important physical factors influencing the development of strength and independence during rehabilitation is the level of the spinal lesion or motor involvement. A general guide to the degree of functional control of the joints in the upper and lower limbs at different segmental levels is given in Figure 1.

	C5	C6	C7	C8	T1
Shoulder	Minimal	Partial	COMPLETE		
Elbow	Minimal	Partial	COMPLETE		
Wrist		Minimal	Partial	COMPLETE	
Hand			Minimal	Partial	COMPLETE

	L2	L3	L4	L5	S1
Hip	Minimal	Partial	Partial	COMPLETE	
Knee		Minimal	Partial	COMPLETE	
Ankle			Partial	Partial	COMPLETE
Foot			Minimal	Partial	COMPLETE

Figure 1. Functional control of joints of upper and lower limb. (Fromley, I., Tetraplegia and Paraplegia, New York: Churchill Livingstone, 1981).

In order to compensate for paralyzed muscles, the primary objective of the training program should be to strengthen and reeducate to the fullest possible degree any residual innervated muscle. For individuals with cervical or high thoracic lesions, development of strength in the neck and shoulder girdle in flexion and rotation is essential to many functional activities.

Innervation at C5 permits the following shoulder movements: flexion, abduction, extension, retraction, elevation, and medial and lateral rotation. Weak flexion of the elbow is also possible.

A lesion below C6 involves some return of shoulder adduction and horizonal flexion, forearm supination, and wrist extension. Lesions below C7, C8, and T1 allow extension of the elbow, forearm pronation, along with flexion and extension of the wrist and fingers. Any existing innervation of arm, wrist, or finger musculature indicates strengthening in these areas. Development of the triceps (elbow extension) is extremely important in facilitating transfers, gait training, and wheelchair propulsion. In addition, strengthening of the latissimus dorsi is highly indicated (shoulder adduction) in these individuals as it bridges the paralyzed parts of the body with the nonparalyzed and assists in sitting balance and postural sensibility (Bromley, 1981).

Strengthening exercise for the trunk muscles (upper back, abdominals, ribs, obliques) are recommended for those with lesions between T1 and T9. Complete control of these muscles, including the lower back, is attained between T10 and T12.

Segmental innervation from L1 to L3 involves flexion of the hip and extension of the knee. The ability to walk with support (without the swing-through gait) begins at this level.

Return at L4 and L5 permits movements of the foot (dorsiflexion, inversion, eversion), while L5 alone provides extension of the hip and flexion of the knee.

Innervation of S1 through S3 allows any remaining movement of the foot to occur. The individual additionally maintains all motor functions previously mentioned for cervical and thoracic innervation.

Techniques used to assess muscular strength in the physically disabled have included manual muscle testing, grip force (dynamometer, cynamometer), repetitive weight lifting, static cable tensiometry, and isokinetic measurements (Davis et al, 1981).

Strength training techniques currently available to Adapted Physical Educators include the following:

1. Active assistive exercise
2. Active exercise
3. Manual resistance with a partner
4. Free weights/ankle and wrist weights
5. Wall pulleys
6. Isokinetic, Universal, Nautilus, and Total Gym.

When using resistive exercise, the strength program may be divided into two phases for both the paraplegic and quadriplegic. Phase 1 would involve one set of 15-20 repetitions at a relatively light poundage for the purpose of developing neuromuscular coordination and preventing trauma to atrophied tissue. This should continue for approximately two weeks. During Phase 2, the poundage is increased while repetitions are decreased to between six and 12 per set (three sets optimal).

If muscular endurance is desired, the individual can increase the repetitions to between 12 and 20, rather than increasing the poundage.

To facilitate independence during the weight training program, the following pieces of equipment are desirable:

1. Multipurpose bench (Chawla et el, 1980). The bench surface should consist of 3/4 inch ply, padded with two inch vinyl covered foam. The narrow end supports the head and shoulders and permits some mobility. The wide midsection and base stabilizes the trunk and provides support during transfers. Seat belts should be attached to provide lateral stability. This bench can then be situated under a wall pulley bar for upper back exercises.
2. Quad gloves. Quadriplegics will need these to assist with their grip when lifting free weights for shoulder exercises or grasping handles for arm pedalling.
3. Wrist and ankle cuffs. These are considered an alternative to the quad glove but must be used in conjunction with pulleys.
4. Pulleys. Bilateral strengthening exercises for the latissimus dorsi, triceps, and other upper extremity musculature can be performed by utilizing a simple system of weights and pulleys. This can be constructed in the home at relatively low cost.
5. Ankle and wrist weights.

Cardiovascular Conditioning

Due to the lower extemity paralysis found in quadriplegia and paraplegia, arm pedalling or wheelchair pushing have become standard methods for cardiovascular conditioning. The following is a partial list of egometric equipment in use today for aerobic training utilizing the arms (Figoni, 1982):

1. Wheelchair treadmills
    a. electric
    b. platform with rollers (free wheeling)
2. Arm crank ergometers
    a. friction-braked
        1) Monark rehab trainers
        2) Monark bicycle ergometer (mounted on table)
    b. electric
3. Wheelchair ergometers (interfaced with Monark bicycle ergometer or Cybex II isokinetic dynamometer).

Fitness testing for the physically disabled has included multistage progressive workloads of both continuous (load increased every one to six minutes until maximal heart rate is achieved) and discontinuous (three to six minute bouts with load changes separated by one to five minute rest periods) protocols. Dreisinger (1982) has indicated that wheelchair ergometry yielded similar VO2, heart rate and systolic pressure whether performed as a continuous or discontinuous test.

Several factors must be considered when determining target heart rates for training. Stenberg and associates (1967) have demonstrated that maximal heart rate averages approximately 11 beats per minute lower for arm than for leg exercise. Thus, when using predicted age-adjusted maximal heart rate (220 - age) for determining work intensity, one must subtract 10 beats per minute to correct for arm exercise. Otherwise, the potential maximum heart rate of a paraplegic with innervation of approximately T7 and below is not influenced by the disability. Appropriate training intensities for this group are between 70% and 80% of predicted maximum heart rate. In quadriplegia and higher thoracic lesions, motor paresis of the upper extremities limits significant heart rate increases and consequent gains in fitness. In addition, current research indicates that sympathetic response to exercise becomes decreasingly deficient the higher the lesion in the spinal cord (Nilsson, et al, 1975; Wolf and Magora, 1976; Knutsson, et al, 1973). In lesions above T4-T6 the inadequate regulation of the heart slows the development of exercise tachycardia. Increases in heart rate during exercise are generally restricted to between 100 and 130 beats per minute, even though a maximal effort is present. Therefore, appropriate training intensities cannot be determined from predicted age-adjusted maximum heart rate.

Cadence during training will vary depending upon the equipment used. Studies involving arm pedalling used cadences between 50 and 70 rpm, while lower values were required for wheelchair ergometry. Although most researchers have found greater performances with the arm crank ergometry than wheelchair ergometers, correlation data between the two has been high (Wicks, et al, 1977).

Studies involving arm pedalling have primarily used interval training for improving fitness parameters of those with lower extremity disabilities. Significant improvements in physiological responses have occurred using three to four bouts of four minute durations with two to three minute rest intervals (Glasser, et al, 1982; Nilsson, et al, 1975). Pollock and associates (1974) alternated equal one minute intervals of high and low work bouts, progressing to 30 minutes of continuous high workload by the 19th week of training.

Researchers generally agree that frequency of training should occur between three to five times per week.

Precautions During Training

1. To facilitate dissipation of body heat generated during exercise, have a fan blowing on the individual. Perspiring does not occur below the level of the lesion.
2. Empty the bladder prior to exercise to minimize the effects on the circulation by hyperactive distension reflexes (Knutsson, et al, 1973).
3. When initiating a program of arm work for untrained individuals, closely monitor cardiovascular responses until typical patterns are established.
4. Orthostatic reactions resulting in faintness requires assuming a horizontal position. The level of injury is not entirely accurate in determining orthostatic reactions.

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A SUPERSTAR SUMMER PROGRAM FOR BLIND AND PARTIALLY SIGHTED
(Combining the Services of a Teacher for Visually Handicapped with an Adapted Physical Education Teacher)

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This workshop is a description of an ongoing, non-academic, twenty-two day extended school year program for blind and partially sighted students. This summer program teams the services of a visually handicapped resource teacher with an adapted physical education teacher. The workshop will feature both teachers speaking along with a 30 minute film of some of the summer's activities and a 45 minute videotape showing the roller skating instruction and accomplishments of each student.

The workshop will trace the history of this particular program from its beginning in 1964 -- the need for such a program, the funding in times of no financial support, the use of community services and follow this program through the years of "monies available for everything" to the present time of little funding. The need and intervention of the physical education services will be discussed and we will show how this combination of services produces a superior program for handicapped students.

The importance of the IEP will be stressed, along with the qualifications of students to enroll in the program. Ages of students, physical abilities, length of stay in the program will be discussed.

Budgeting will be explored and will include, for example, what happened this past summer when the number of hours of the program was cut from six to four. We will have handouts describing the activities we did during times of unlimited funds to the times of austerity! -- How we ran an effective program regardless of monies available.

Handouts will be available showing our schedule of activities and the times involved.

The activities discussed for this daily living, exploring the world, and physical fitness will include cooking, swimming, parachute games, dancing and music, bike riding, meal planning, shopping, a daily fitness program. The field trip experiences will include those that are highly educational and informative for the student, how they are adapted for visually handicapped students and also the "fun" days, Marine World and the like.

Our movie film shows a sampling of the above mentioned activities during the day. It begins with the student's arrival to school and includes art lessons, cooking lessons, bike riding, parachute games and a trip to the U.S. Marine Lab in detail.

The videotape was taped at the roller rink and shows the skating instructor working with the various ages of students we encompass, from kindergarten to sixth grade. It also shows the various steps learned to become a good skater and the results of just a few lessons.

Our conclusion will discuss the carryover of this kind of a program into the academic school year -- we will talk about the "pay-off" for the student, the development we see in self-esteem, self reliance and growth in initiative of attacking new activities with confidence. The companionship developed, the trust shared among the students and teachers; in short, the emotional and social development of each of the students will be shown in those "unmeasurable" ways.

Hopefully, the participants in this workshop will gain informative information on how "anyone can do this" with the use of community services, planning ahead and taking time for our own creativeness to come through!

A MODEL FOR INDIVIDUALIZING MOVEMENT SKILLS FOR CHILDREN WITH SPECIAL NEEDS: O.S.U. SIGMA

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In 1970, Mitzel defined adaptive education as "the tailoring of subject matter presentations to fit the special requirements and capabilities of each learner" (p. 436). However, at least two impediments have traditionally hindered curricular and instructional efforts to adapt physical education experiences for young children with special needs. First, teachers have had difficulty developing appropriate movement experiences subsequent to using standardized motor development and/or physical fitness tests. Secondly, teachers have had trouble assessing curricular programs which do not provide their own or suitable assessment devices.

In order to eliminate the aforementioned problems, a model (Loovis & Ersing, 1980) was designed to facilitate an individualized approach to programming fundamental motor skills and patterns for children (primarily ambulatory) with special needs. The model consists of three essential components: assessment, planning and implementation.

O.S.U. SIGMA

The model is entered via the assessment component, The Ohio State University Scale of Intra-Gross Motor Assessment (O.S.U. SIGMA). The instrument which is criterion-referenced measures qualitative levels of performance in eleven, fundamental motor skills, These include: walking, running, hopping, throwing, catchint, jumping, kicking, striking, skipping, ladder climbing and stair climbing.

The emphasis here is on qualitative behavior; that is, SIGMA examines the process which is used by a student to execute a movement skill or pattern not the product or result of the movement. For example, in measuring catching, emphasis is placed on assessing the movement characteristics (i.e., how the arms, hands, and body were used to catch) not on whether the student makes a successful catch.

Insert Figure 1 about here

Each skill has four levels of motor behavior arranged developmentally from the least to the most mature functional behavior for that skill. Results of application of SIGMA provide teachers with a descriptive assessment of a student's present level of educational performance in fundamental motor skills and patterns. Additionally, the data provide information as to an initial starting place for program planning and implementation. A further advantage of the SIGMA is its potential application in natural play environments with data being collected unbeknownst to the student.

Insert Figure 2 about here

O.S.U. PBC

The last two components of the model, planning and implementation, are variations of a generic element, The Ohio State University Performance-Based Curriculum

(O.S.U. PBC). The PBC provides a sequence of instructional experiences for each level within each skill of SIGMA. The instructional experiences consist of two items: (1) short-term instructional objectives which are written in behavioral terms and sequentially arranged, and (2) a series of progressively designed teaching-learning experiences to facilitate achievement of the short-term instructional objectives. Implicit in the design of the objectives and learning experiences is an accountability system for practitioners.

Summary

The model which has been presented appears to be a viable programmatic alternative. It is not, however, the only model or approach for developing fundamental motor skills and patterns. The performance levels of O.S.U. SIGMA are, at best, tentative and await the results of numerous ongoing research projects for verification or refutation of their empirical validity. Also, the PBC seems to be sequential, succinct and developmentally appropriate as a set of companion experiences for O.S.U. SIGMA.

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SKILL OF Catching

TEST EQUIPMENT: 6" Rubber Playground Ball

	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
TEST CONDITIONS	When the examiner stands five feet in front of the child and throws the ball underhand,	Same	Same	Same
	NOTE:	Ball should reach the child between the shoulders and the waist! Ball should travel in an arc--not a straight line!		
PERFORMANCE	The child attempts to catch the ball twice in three trials by extending his outstretched arms in a stiff manner in front of his body thereby causing the ball to rebound off the arms.	The child, using the hands and arms (bent at the elbows) to scoop or bring the ball into the body, catches the ball twice in three trials.	The child catches the ball and demonstrates the following behaviors in two out of three trials: a. holds arms bent at the elbows in front of the body, b. uses hands in opposition to one another, i.e., a "clapping" motion, and attempts to trap ball.	The child catches the ball and demonstrates the following behaviors in two out of three trials: a. holds arms bent at the elbows at the sides of body, b. uses hands in a cupped fashion such that: 1. on throws above the waist the thumbs are nearly touching and 2. on throws below the waist the little fingers are close together.
	Wickstrom, 1970	Gutteridge, 1939 McCaskill and Wellman, 1938 Seefeldt et al., 1972 Wellman, 1937 Wickstrom, 1970	Gutteridge, 1939 McCaskill and Wellman, 1938 Seefeldt et al., 1972 Wellman, 1937 Wickstrom, 1970	McCaskill and Wellman, 1938 Wellman, 1937 Wickstrom, 1970

Figure 1. Catching Assessed by O.S.U. SIGMA

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Figure 2. Summary Descriptions

of O.S.U. SIGMA Levels

Basic Skill	Level I	Level II	Level III	Level IV
Walking:	Ten record stand	Cruising	Walk-1 support	Opposition Walk
Stair Climbing:	Creeps or animal walk	Two foot landing up, and down!	Alternate up, two foot landing down	Alternate up and down
Running:	Rapid walk	Wide base, wide arms	Egg beater	Non-support
Throwing:	Two hand push	Arm only, no foot movement	One sided/ homolateral	Opposition Throw
Catching:	Arm stretch	Scoop	Vice squeeze	Cup fashion
Kicking:	Part of walk	Stiff Leg	Knee action kick	Knee action kick with follow through
Jumping:	Jumps down	Jump in place no arms	Jump, improper arm action	jump with arm action
Hopping:	Jump	Rasies up on toe	Leg lift hop	Body lift hop
Skipping:	Runs/hops/ leaps/gallops	Same side skip	Segmented alternate	Alternate skip
Striking:	One hand Chopping	Two hand chopping with waist bending	Rocking swing	Twisting swing
Ladder Climbing:	Climbs one step	Two step climb	Alternate up two down	Alternate step up and down

PARENT EDUCATION: IMPLICATIONS AND STRATEGIES FOR SPECIAL PHYSICAL EDUCATION

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The development of President Reagan's deregulation policy has led to serious reductions in the provision of funding and support for services to many populations, including the handicapped. Educational programs receiving the most serious reductions in federal funding and support include special education, early childhood education, and bilingual education. With these reductions it is becoming increasingly evident that alternative sources of support must be utilized. The most direct and beneficial source available to most programs is support from the local education association. Historically, this support has been allocated to visible programs that are politically active and which possess strong advocacy groups in the community. Therefore, it is becoming increasingly evident that the future of adapted physical education programs, regarding our inclusion in the academic community, relies on our ability to educate the community regarding the goals, objectives, and direction of our programs. Parent education may be a viable catalyst regarding the development of community and societal support.

Historical Perspective - Parent Education Groups

Programs for the physically gifted, i.e., interscholastic athletics, have, traditionally, received strong parental/community support. These groups, referred to in many communities as "booster" clubs, have responded to the needs of their representative organizations in many ways including: development of facilities, purchasing of specialized equipment, dissemination of program information, provision of support funds, etc. "Booster" club operations usually include weekly meetings with guest speakers, a review of strategies for an upcoming contest, and generally a strong feeling of comradery among participants is generated at these meetings.

This "booster" club model utilized in support of physically gifted programs may be an effective model for the development of parent advocacy groups for the handicapped and disabled, for these weekly meetings are a form of parent education meeting. Parents would be informed of (a) handicapped/disabled community services (guest speaker), (b) goals, objectives, and strategies that will be utilized in support of their child's needs, and (c) funding, equipment, and facility "needs" of the organization. The natural outcome of a meeting such as this would be a better understanding of program direction, goals, and content, resulting in a group of individuals that share common knowledges, motives, and interests which would ultimately result in cohesion. An educated, cohesive, and motivated parent group may be the most essential ingredient for enhancing the longevity and quality of an adapted physical education program. Following is a researched, educational plan which could be used for parents and adults who are likely to become "our booster club."

Parent Education

Instructional Environments

An informal environment (lounge, living room) is most conducive to adult learning. The uncarpeted, neon-lit, formal atmosphere of the classroom may conjure up unpleasant, threatening thoughts of earlier learning experiences. Research indicates that a warm, mildly-lit, carpeted "informal" atmosphere is most conductive to adult attention and comprehension. Perhaps the teachers lounge in your school would meet this need or rotation of weekly meetings at various homes of group members may add the personal touch needed by the adult learner. Our environmental goal should be directed toward (a) comfort, (b) trust, and (c) warmth (color tones, lighting, and carpet).

Instructional Planning

Previous to meeting with a parent group, the following planning is suggested:

1. Identify needs of the organization for the parent education session.
2. Project possible needs of parents for the specific meeting, i.e., an unexpected community "happening" may require additional discussion time.
3. Plan curriculum content for the meeting with a flexible time frame for presentation of material.
4. Establish methods to be utilized for each meeting, i.e., instructional procedures, audiovisual aids, guest speaker.
5. Obtain instructional resources (contact speakers, arrangements and equipment use, facility reservation, etc.).

Upon completion of the instructional planning, conduct the educational program itself and evaluate.

The planning sequence identified above may seem obvious but we must remember that exclusion of only one of those items may destroy a trusting bond that we may have established with our parent learner. Examples include: (a) the leader not being prepared, (b) not being sensitive to the immediate needs of the parent group to discuss a community "happening" that occurred on the same day as the meeting because the instructor felt the need to stick to a prearranged curricular time frame, (c) not having appropriate audiovisual equipment, and (d) failed to obtain the intended guest speaker due to poor communication and planning. Parents are busy people, deserve quality time spent with us, and soon know when they are not receiving quality instruction.

Instructional Methods

Small group instruction (informal). The informal discussion group is probably the most indispensable method for parent educators to practice. It is the most difficult of all methods to handle successfully, yet if handled well, it is the most satisfying to all participants. The leader is placed in a leadership training role rather than that of subject matter specialist. In the informal discussion group, members share the responsibility of planning, leading, and learning. Here is the leader's task and it is not an easy one--to help members see and carry out these shared responsibilities. If the informal discussion group has been skillfully led, participants will come away with a fulfilled sense of attaining their own learning objectives and a leadership training experience. Remember, our commitment must be to (a) educate, and (b) develop leaders for the appropriate development of parent advocacy groups for the handicapped population and our programs.

The parent educator must have an understanding of the basic needs of individuals. Our requirements for belonging and for maintaining satisfactory social relations with others should be recognized as vital to personal growth. Today, many people in this society feel alienated, especially parents of handicapped children. They may live in a community where they do not know the next door neighbor. They may belong to a number of organizations--all of them formal--each for a specific purpose. Each of these organizations, however, may not avail to the parent the opportunity to express their ideas and to relate to individual members. The parent education group can be a vehicle for satisfying individual needs by:

1. Providing opportunities for self-expression;
2. Providing opportunities to share experiences and evaluate them for suggested resources and experiences that can help parents formulate focus and direction for their advocacy group and support of our programs;
3. Allowing a cultivation of personal interests as they may relate to community, parents, and handicapped/disabled needs; and
4. Providing an opportunity for fellowship.

The small discussion group has come to be one of the most useful methods of learning in adult education. It is a natural way of learning in a democracy. It allows the greatest degree of participation. It can generate an atmosphere of equality and respect for the individual. It can develop appreciation for the other fellow's viewpoint. It can create unity through understanding. In short, research indicates the informal group is useful in adult education to stimulate people to learn more about their roles in meeting their children's needs and our program's needs in a free, informal atmosphere. Further, this setting may develop a supportive advocacy source by accommodating a small group of people who are willing to meet on a regular schedule to discuss matters pertinent to their children and our programs.

The parent educator and leader should be looking for ways to make people more comfortable in taking part and in removing or lessening the blocks to participation in study or discussion groups.

Small group instruction (formal). The adults in parent education programs have far more extensive life experiences that they bring to the classroom than does the child. The adult is anxious to look at immediate outcomes from their learning experiences whether they be related to special content objectives, i.e., knowledges of handicapping conditions, or new appreciations, i.e., concerns expressed by other parents. Because of this, parents are interested in an interchange and feedback. They are interested in asking their own questions or listening to the questions and the responses raised and answered by their peers.

What can we as teachers do to take full educational advantage of the parents' desire to learn in small groups? First is to recognize that the lecture is not the only effective technique in teaching adults. Yet, a lecturer can be the primary catalyst that leads to other techniques that can be utilized. A strategy for the development of lecture skills by the parent educator is to observe successful lecturers who both perform and teach. Parent educators, after these observations, must then be willing to enrich the experiences of the learners by any means they can manage. For some it may be by showmanship, for others by distribution of materials related to the content or by the use of visual devices. For still others, it is but a willingness to gamble on breaking up large groups into small groups, and by getting the learners to participate. Second is to understand that when working with small groups of parents you must be a patient listener. Participation in questioning and in discussion by parents can develop if you are willing to pause and listen. Participation by the parent is the key for learning in a small group. This key cannot be turned if we do all of the talking.

The effective lecturer who is a connoisseur of special techniques has an unusual advantage in providing the learning situation that leads both to the achievement of objectives and satisfaction with the process.

Conclusion

Parent education can assist with the education of the community regarding the commitment that our profession has for *all* people: physically gifted, you and old, handicapped and disabled. We must impress upon the general public that we are certainly worthy of inclusion in *every* child's academic program.

SYSTEMATIC SUPERVISION: IMPROVING THE INSTRUCTIONAL PERFORMANCE OF AIDES AND INTERNS

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Physical education teachers of exceptional individuals are increasingly being thrust into the role of supervising a variety of subordinates including aides, interns, student teachers and volunteers. Many teachers are placed in this position without training, or even without a clear understanding of what supervision is and how it should be carried out. Little information exists on what physical education teachers do to fulfill the responsibilities of a supervisor or how effective different supervisory practices really are.

The role of a supervisor has been identified by Mosher and Purpel (1972) as that of developing subordinates both as persons and as effective teachers. This presentation is limited to two important aspects of the supervisory role, observing the instructional act and giving systematic feedback to subordinates regarding their teaching performance.

One of the difficulties facing a supervising teacher is the diversity in education, training and experience with exceptional individuals that a subordinate has had. Persons demanding supervision could range from interns starting their first field experience to volunteers who are retired licensed teachers. In any case, the main concern of the supervisor should be the welfare of the pupils. This can usually be addressed in terms of the quality of instruction that is being provided.

In regard to maintaining quality control over the instructional performance of subordinates, supervisors have two main tasks, analyzing teaching and providing feedback. Analyzing teaching involves accurately observing teacher and student behavior, making records of the observations, interpreting and evaluating the records and suggesting changes based upon the available information.

Within the last few years, various observation systems have been developed (Anderson, 1980; Siedentop, 1982) that can aid supervisors in bringing order to the complicated and sometimes chaotic world of teaching. Supervisors can also develop their own observation systems but these must be designed in a manner that will produce data that are objective and reliable (another person seeing the same event would record it in the same manner).

Table 1 illustrates an observation and feedback tool that is used in the supervision of student teachers at San Diego State University. Three observation techniques; event, duration and placheck recording, can be used to provide a wide variety of information, such as how class time is spent; how the student teacher interacts personally with students; how much and what type of feedback is provided and what are the percent of students on-task, productive and actively engaged. A space is also available for interpreting the information, praising good performance and providing prescriptions for improvement. Any or all portions of the form could be used, depending upon the interest and expertise of the supervisor. So that the student teacher, cooperating teacher and university supervisor can have access to the information, the sheet can be produced in triplicate. If supervision is to continue over time, rates for various categories can be graphed so comparisons can be made from day to day or week to week. In this way, improvements are readily visible and can be reinforced.

In addition to gathering information about the subordinate's teaching, supervisors must be able to provide feedback about it. Feedback can be on the results of the performance or on the process. When people are not aware of their performance and the skills demanded have a definite effect on the outcome, it is important that they receive process feedback. Feedback from supervisors should (a) be given as soon as possible following the performance, (b) describe exactly what happened, not what the supervisor thought happened, (c) be generalizable to further situations, (d) be relevant to effective teaching, (e) be in units small enough to be assimilated and acted upon and (f) be coupled with ample practice opportunities.

Supervision should be a helping process. A supervisor can help subordinates by teaching them to analyze their own instructional performance. Self-analysis begins by self-monitoring, which involves systematically observing and recording one's own behavior. By self-monitoring one's own teaching, subordinates can determine if they exhibit behaviors that need to be changed and subsequently to determine if the desired changes actually take place over time. Self-monitoring is reactive. The mere act of observing and recording one's own behavior often brings about desirable changes in that behavior. In addition to monitoring by using stop watches and golf counters while they are teaching, subordinates can monitor their behavior using audio or videotaped recordings. Recordings have the advantage of making data available permanently so that subordinates can observe themselves privately or at a time that is personally convenient. Recordings will also permit supervisors to view the class with the subordinate so that feedback can be more direct, specific and immediate.

Teaching others to teach is similar to teaching other complex patterns of behavior--the individual skills must be shaped gradually. The role of a supervisor in helping others become competent physical education teachers of exceptional individuals is to divide the process into a large number of small steps and to ensure that reinforcement is contingent upon the accomplishment of each step. Observing systematically and giving helpful feedback are only part of supervisory process, but they are prerequisite skills demanded of a competent supervisor in any setting.

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Table 1

PHYSICAL EDUCATION OBSERVATION ANALYSIS

TEACHER__________________ ACTIVITY__________ GRADE____ DATE____ TIME____ to ____

OBSERVER __________________ OBSERVATION # _____ STATION ____ PLAN _____ N= _____

EPSIODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	TOTAL	PERC
Management																					
Instruction																					
Activity																					

BEHAVIOR REACTIONS

	Positive	Negative
GEN		
SPEC		

+/min____ -/min____

n = name
g = small group
c = class

SKILL FEEDBACK

	Positive	Corrective
GEN		
SPEC		

+/min____ C/min____

Special conditions:

Time ____ ____ ____ ____

Student Behavior

N = _____

TIME	APPROPRIATE	PRODUCTIVE	ACTIVE
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
____	____┴____	____┴____	____┴____
TOTAL	________	________	________
%	________	________	________

PHYSICAL EDUCATION OBSERVATION ANALYSIS
DEFINITIONS

Class Behavior Episodes

An episode refers to the amount (duration) of time a class spends in an activity sequence.

Management - Class time spent in organization, waiting and changing activities.
Instruction - Class time spent receiving information and observing the performance of others.
Activity - Class time spent engaged activity in appropriate drills, dance, game and other movement forms.

Teacher Behavior Reactions

Positive - A reaction to an appropriate student behavior other than a skill attempt. ("Thanks for hurrying." "That was a good job of being quiet." "It was nice of you to help, Sally.")
Negative - A reaction to an inappropriate student behavior other than a skill attempt. ("Peter, come down off the cargo net." "Wipe the mud off your feet before coming in." "Ray, don't throw your racket.")

Teacher Skill Feedback

Refers to information about a skill attempt that is made available to a learner for the purpose of improving the performance.

Positive - A reaction to a skill attempt done well by a student. ("Very well done." "Nice shot." "You kept your arm straight that time.")
Corrective - A reaction to an error in a learner's skill attempt. ("You have to move faster." "Keep your arms straight next time." "Bend at the knees for more power.")

Teacher reactions and feedback may be directed toward individuals "I", to a small group "G"; or to the class as a whole "C". An "N" can be coded if the first name of the person is used in the interaction.

Teacher interactions may also be general or specific. General statements tell very little about a student's behavior. ("Good," "Nice shot" or "That was better"). Interactions that provide additional information about the performance are coded as specific. ("Good, your set went 10 feet in the air that time." "That was better, you really got down in front of the ball.")

Student Behavior

An estimate of student behavior can be determined by sampling at regular intervals (e.g., every 5 minutes). A placheck (planned activity check) is completed by taking ten seconds to observe the group by moving your focus from left to right and counting the number of students that fit the category of interest: (1) appropriate/inappropriate; (2) productive/nonproductive; (3) active/inactive.

Appropriate behavior includes any student behavior that is consistent with the educational goals of the specific situation. Inappropriate behavior is student behavior that detracts from these education goals. Productive behavior demands student engagement in the subject matter. Active learning demands physical engagement in an appropriate activity (e.g., waiting in line would be appropriate but not productive; listening to the teacher would be productive but not active learning; completing a jump shot would be appropriate, productive and active).

PHYSICAL EDUCATION IS FOR ALL CHILDREN

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Modifying the Regular Physical Education Program

In these days and times of constant change with regard to California State laws for special education, one aspect is becoming more clear; more and more handicapped individuals are being mainstreamed into regular education and regular physical education. Many teachers are being asked to modify their physical education programs in an effort to meet the needs of these special individuals.

The problem of just how to accomplish this or, more to the point, where to start is faced by regular education teachers daily. Many teachers have no adapted physical education resource to contact when an immediate need arises or it may take time for the overworked adapted physical education specialist to come to a teacher's assistance.

Therefore, this presentation is aimed at the regular education teacher who runs his or her own physical education program as well as the physical educator who would like a guideline on program modification to include every child as actively as possible in the physical education program.

Adapted Physical Education Overview*

I. Building the Foundation

A. A medical request form should be signed by the physician stating the disability, the length of the disability and any recommended activities or exercises pertaining to a student.
B. Alert the school nurse and front office about medical forms that will be sent directly to the adapted physical education teacher.

II. Identification of Students

A. The majority of adapted physical education students are referred to the program through a physician's request. However, teachers of regular physical education also help to identify a student in need of special service.
B. Teachers, counselors and the school nurse can also be watching for students who have had a stuatus change for whatever reason.
C. Accurate and organized files, records and test data for each student referred should be readily available in the event of any question about that student.

III. Program Possibilities

A. Weight lifting and conditioning
B. Individual sports: handball, dance, swimming, tennis, golf, bicycling, gymnastics and obstacle course
C. Team sports: volleyball, hockey, basketball, new games
D. Recreational activities: horseshoes, bowling, shuffleboard, jump rope, bicycling, jogging, swimming, spectator skills
E. Remedial exercises: prescribed by physician, adapted P.E. teacher and physical therapist.

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*Taken from Vista Unified School District Inservice

IV. Key Points

A. The adapted physical education class should be handled with the concept of mainstreaming the student back to the regular P.E. class.

B. The adapted physical education class should have the same high standards of dress, attendance and participation as that of a regular P.E. class.

Modifying for Individuals In a Regular Physical Education Class

Types of Disabilities and Suggested Modification

1. Asthma--Emphasize breathing exercises, limit running activities. Expect coughing and wheezing with diaphraratic breathing.
2. Cardiovascular problem--Contact parents, physician and student. Reduction of hyperactivity should be taught as well as breathing exercises. Swimming is excellent. Pulse rate should be taken before and after a sequence of exercises are tried. This is to determine an appropriate amount of exercise. Exercises should be performed in a back lying position which is least demanding. Student should be encouraged to establish his own pace in activities. Emphasis should be upon competition with self rather than others.
3. Knee problem--Depending on the knee problem, suggest strengthening exercises. Limit running activities and quick lateral movements. Students usually know their own limitations.
4. Obesity--Encourage participation. Students may have difficulty with exercises, emphasize walking if students are unable to run. A mile walk is good activity as well as golf, throwing activities in track and field. Avoid tasks which involve own weight as weight training and some tumbling stunts. Develop favorable attitudes toward fitness. Aerobic activity, such as exercise to music or dance, may be an encouragement for participation.
5. Poor Motor and Skill Ability (Including Cerebral Palsy and other mild orthopedic handicaps)--Depending on the activity; break the activity down into specific skills with drills. Group students on skill level. Perhaps assign a student assistant to the lower skilled student. Involve the student whenever and wherever possible in the P.E. class.
6. Scoliosis--Swimming is excellent. Student should be encouraged to participate in all P.E. activities and sports. Forward flexibility should be a-avoided in severe cases. If exercising use only symmetrical exercises which develop right and left sides of the body.
7. Visual proglems--Be aware of the student's problems. Develop skills of the activity. May need to use bigger and brighter balls or paint the end of a badmiton birdie red or bright yellow. Give verbal cueing whenever possible to aid reaction time and increase success.

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FILMS:

Not Just a Spectator (16mm, sound, color, 26 minutes)

Town and Country Productions, 21 Chayne Low, Chelses, London. Available in U.S. from International Rehabilitation Film Library, 20 West 40th Street, New York, 10018

Able-bodied and disabled participate together in activities that challenge and give personal satisfaction to a number of people with disabilities.

Out of Left Field (16mm, sound, color, 7 minutes)

American Foundation for the Blind, 15 West 16th Street, New York, New York 10011.

Emphasis on integration of blind and visually impaired youth with their sighted counterparts in community based social, recreations and athletic activities.

The Promise of Play (16mm, sound, color, 22 minutes)

Bradley Wright Films, 309 North Duane Avenue, San Gabriel, California 91775.

Report on a Title IV ESEA program of physical education integration of orthopedically involved children and the regular classroom student.

****** Ask about 101 Activities for the handicapped, book by Ed Greaves and Lee Anderson, loaded with great activities and games to help integrate disabled students into regular physical education, complete with modifications, ready to be implemented and taught in your class.

PROVIDING SEQUENTIAL STABILITY, LOCOMOTION AND MANIPULATION ACTIVITIES IN THE OUTDOOR OR PARK ENVIRONMENT FOR AUTISTIC AND/OR DEVELOPMENTALLY DISABLED CHILDREN

LISA M. RINI, Ph.D.
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This presentation is based upon personal experience as the adapted physical education consultant at Camp Hand in Hand during the 1979 and 1980 seasons. Camp Hand in Hand provided a residential recreation program for over fifty autistic children from school districts throughout Minnesota. In addition, the camp provided practicum experiences with these children for approximately two-hundred individuals including professionals, staff, university students, and volunteers. The activity areas emphasized at camp included adapted physical education, adapted aquatics, art, creative dramatics, and speech and language activities. A small portion of the adapted physical education packet distributed to personnel working directly with the children follows this introduction. Today's presentation will include:

A. An Overview of Camp Hand in Hand - Its Philosophy, Goals, and Major Components

B. The Adapted Physical Education Program - Its Purpose, Location, and Implementation

C. An Evaluation of the Camp Hand in Hand Adapted Physical Education Program

The Adapted Physical Education Program for Camp Hand in Hand

The primary goal of the adapted physical education program was to provide the staff with a foundational understanding of developmental stability, locomotion, and manipulation activities appropriate for autistic or autistic-like children via the following experiences:

(a) in-service lectures designed to give both theory/rationale and training preparation for the camp physical activity program,

(b) readings from the handout material (the packet) to assist the learner in absorbing the content of the lecture/discussions,

(c) daily opportunities to teach the activities discussed in the lecture/readings appropriate to the camping experience, and

(d) completion of observations/evaluations which emphasize psychomotor concerns necessary for planning/implementing physical activities for autistic children.

The following chart describes the typical characteristics of autistic children and provided a basis for planning appropriate activities in a camp setting. (This chart is available through AAHPERD from the IRUC Clearinghouse in: Physical Education, Recreation, and Related Programs for Autistic and Emotionally Distrubed Children.)

CHARACTERISTICS OF CHILD	PROGRAM-PLANNING CONSIDERATIONS	LEADERSHIP CONSIDERATIONS
1. Resistance to change.	1. Keep program format the same.	1. Try to assign same leaders to children or groups of children for each activity, thus maintaining necessity for children to become accustomed to new leaders.
2. Lack of eye contact with others; no indication of understanding spoken words.	2. Include activities that can be explained by demonstration or in a few words.	2. Get child's attention befor attempting to demonstrate or explain; once eye contact is established follow immediately with one-word or short phrase directions.

CHARACTERISTICS OF CHILD	PROGRAM-PLANNING CONSIDERATIONS	LEADERSHIP CONSIDERATIONS
3. Insensitivity to pain; apparent unconcern for personal safety.	3. Conduct program in a relatively confined area free from hazards; maintain low (3:1) child to staff ratio.	3. Watch closely.
4. Repetitive nongoal-directed body motions or behaviors.	4. Structure program and environment so that child does not have opportunity to engage in undesirable behaviors; keep program moving; do not include activities that keep children waiting in line for their turn.	4. Do not reinforce these behaviors by giving child undue attention when he/she engages in them.
5. Retardation in some areas often accompanied by superior abilities in other areas.	5. Include initial assessment and periodic re-evaluation of abilities as part of program, so that both remedial activities and activities making use of superior abilities are provided for each child.	5. Conduct initial assessment of abilities (in whatever area program i focused); periodically re-evaluate abilities; develop individualized program for each child based on strengths and weaknesses.
6. Preoccupation with certain objects.	6. Be flexible in planning program to allow for varied interests of participants.	6. Use preoccupations as jumping off points for future activities (for ex., child who is preoccupied with string could start collection fibers, display, and identify these).
7. Perceptual-motor difficulties.	7. Include variety of perceptual-motor activities in program.	7. If child has difficulty copying movements, brin his/her body through th desired motion; be prepared to teach parts of an activity before chil will master whole activity.

Station Activities

The station activities were designed for an outdoor or park environment. Trained student leaders were positioned at each station and instructed a small group of children and their staff in the various sequential activities. Themes for each day covered the spectrum of foundational skills for the primary purpose of exposing the staff to simple techniques of guiding children through basic physical skills with minimal equipment. The themes included body awareness, stability, locomotion, and manipulation activities.

Body Awareness Activities

Station	Beginning	Intermediate	Advanced
1	Name and touch all body parts. Talk about function.	Meet and part as many parts as possible.	Yoga - or conscious relaxation, squeeze and relax.
2	Child lie on grass - outline body with chips, twigs, etc.	Stretch, bend, twist as many as possible (but only one type at at time).	Combine - some parts twist, some stretch simultaneously.
3	Touch child's body parts to same of teachers, vary levels.	Benches - move different body parts over, under, around, next to, etc.	Human obstacle course (2 kids make shapes and have others move through).
4	Close eyes (child) identify parts touched by teacher.	Using arm(s) (or stick) or leg(s) write letters, numbers, words in the air, on the grass, etc.	Make portrait of a body using sticks, twigs, leaves, etc.
5	Sand prints - with feet, hands, elbows, etc.	Make geometric shapes in sand, make same shapes with the body.	With partner - make shapes, increase/decrease size of shape on 5 count.
6	Head, shoulders, knees and toes sing - touch, increase speed.	Move different body parts at different speeds (simultaneously).	Throw leaves on ground - try to make shape on ground with your body.
7	Move different nature items with different body parts.	Make different body shapes (teacher); have child imitate (reverse roles - teacher imitates).	Play Dr. Tangle (or) increase/decrease number of body parts used for base of support.

Static Balance

	Beginning	Intermediate	Advanced
1	(Grassy area) vary base of support (1-6) Reinforce body part names.	Same task with another child or teacher.	Build pyramid(s) using kids and teachers - vary size and shape.
2	(Bench) walk across FSB, follow the leader	Vary action - step over stick, under; stop and turn around, etc.	Vary mount, moving across and dismount.
3	(Logs) stack, build a pyramid.	(One log) balance on it, jump over it, twist down and up, etc.	Walk on rolling log.
4	Sitting - moving different body parts stopping and starting on signal.	Moving around (in small area), stop and start on command, vary level.	Play statue-hold freeze 5 counts (teacher and kid or kid and kid).
5	(Bench) - Jump off/ get on without using hands, length of bench.	Hold on with hands, jump side to side (on ground); jump for height of bench.	Jump for distance off bench, end on feet, tuck and roll.

Static Balance (continued)

Station	Beginning	Intermediate	Advanced
6	Place leaves and rocks on body parts, balance (reinforce vocabulary).	Try to balance objects and move simultaneously (head, back of neck, stomach, etc.).	Vary base of support, balanc and move with 3 or more objects.
7	Rocking on grassy area-rock into roll (teacher can sit with child or do solo).	Egg roll, log roll, forward roll.	Roll in straight line down slope.

Locomotion Activities

	Beginning	Intermediate	Advanced
WALK 1	11 lines on ground walk between, around, through, emphasize correct heel, toe, etc.	Vary level, speed, follow path (FBS).	Follow the leader low, high, fast, slow, etc. in and out of obstacles.
RUN 2	a) Holding on to hand b) By self, verbal prompt (have goal-tree or other).	Practice starts and running/(explain diff. between run and jog).	Play tag with teacher, have mini-relay or race (pass lea
HOP 3	(Explain it) Balance on one foot, hop with assistance (both sides).	Leaves on ground - hop from one to another; change feet.	Adapted hopscotch (make one) Have hop through in squares, around, etc.
JUMP 4	(Explain it) Jump in place. Squat, jump for height.	Jump and hit leaves (on tree). Emphasize extension.	Log or stick maze - jump over, around, etc.
LEAP 5	(Explain it) "Pretend" creek (use leave pile) Try not to touch.	Vary obstacles, sizes and shapes - WA leap over any and every thing.	Combine run and leap, land and roll (if possible).
GALLOP & SLIDE 6	Demonstrate and teach difference to teachers.	a) Join hands-teacher & kid-do so for 10 feet. b) Do in a circle.	(Adapted) Seven Jumps 4 slides left/ 4 slides right - postures.
7	Design an obstacle course (a) walking	(b) quickly walking or running	(c) walk/run, hop/jump, leap.

Manipulation Activities

	Beginning	Intermediate	Advanced
THROW 1	Instruction-difference between over, under. Practice reach, grasp, release.	At target of different sizes - (Especially ones that will move or collapse).	Increase distance toward target. Throw over/under object.

Station	Manipulation Activities (continued)		
	Beginning	Intermediate	Advanced
CATCH			
2	Instruction-difference between over, under. Discuss & do teaching activity (finger, rock)	Teacher toss to child, vary height, speed.	Increase speed, distance, weight of object, toss back and forth (do as I do).
STRIKE			
3	Instruct (hands) Hit leaves in tree. Toss leaves/feathers & hit.	Wood chips - hit repeatedly into air-left/right hand.	Toss & hit wood chip to target (self). Teacher toss and child hit.
KICK			
4	Instruct (feet only) Kick variety of round objects (leaf balls, cones, etc.)	Kick same object repeatedly toward a goal	Kick leaf pile high, low, hard, soft-toward target. (Drop kick leaf ball).
	Emphasize: Use of correct posture and whole body		
LIFT/CARRY			
5	Lift & carry variety of objects toward center (Sit in circle-pass objects).	Build a fort. (Big one if possible).	Take it down (fort). Use assembly line if possible.
PUSH/PULL			
6	Use different body parts, push & pull variety of objects (Sit in circle, pass it one).	Push/pull self across benches (seal crawl).	Pull-ups (if stick available) Lying on ground Others-Log roll position - push person.

The "evaluation" form provided feedback to the parents and school personnel concerning which activities the children participated in during the adapted physical education component of Camp Hand in Hand. No attempt was made to assess the quality of the child's participation.

______________________ HAS PARTICIPATED IN PHYSICAL EDUCATION ACTIVITIES FOR
(Child's name)
CHILDREN WITH HANDICAPS (PEACH). MOVEMENT EXPERIENCES INCLUDED: (TEACHERS: CHECK THOSE PARTICIPATED IN):

LOCOMOTOR

_____ WALKING
_____ RUNNING
_____ HOPPING
_____ JUMPING
_____ LEAPING
_____ SLIDING/GALLOPING

MANIPULATION

_____ THROWING
_____ CATCHING
_____ STRIKING
_____ KICKING
_____ LIFTING/CARRYING
_____ PUSHING/PULLING

STABILITY

_____ BODY AWARENESS
_____ BODY SHAPES
_____ ROLLING
_____ BENDING, TWISTING STRETCHING
_____ BALANCE ACTIVITIES
_____ RELAXATION

The main objective for the week was providing the teachers with opportunities in observing and participating with the children in directed movement experiences. All the movement experiences emphasized the use of the natural environment and equipment found in a camp setting (leaves, logs, grass, sand, benches, picnic tables, etc.).

The physical education staff wish to encourage parents and teachers to continue participating in a wide variety of activities with their children.

We would like to thank both the parents and the camp staff for the opportunity to work with the children and their teachers. It was a tremendous growing experience for all concerned.

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CAMP
HAND IN HAND

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MEET STEPHEN PULLIAM

Pete Saccone
Cajon Valley Union School District

I would like to introduce you to Stephen Pulliam. Stephen is thirteen years old. He is entering the sixth grade at Montgomery Middle School in the Cajon Valley Union School District in El Cajon, California.

Stephen is a very personable young man who really loves life. He is especially nice to everyone -- young and old. I've particularly noticed how well he accepts the exceptional child -- he works beautifully with them.

Stephen was in my self-contained fifth grade class and participated in my summer running clinic for seven weeks. He added a lot to our class. He always attempted to do his best work, he was always prepared, he got along well with the others in the class, he was always willing to share and he was always offering to be helpful. I imagine most teachers would consider him a model student.

The children in my class participate in a program called, "It's 'Funner' to be a Runner!" Stephen and the others in the class were really involved in the program. They gained a great deal from it, and I doubt that they will ever forget their experiences with it.

As a part of the program, the kids run in races on weekends. (They walk, jog and run an average of three miles each day that they are in school.) The weekend races include two and three mile fun runs, five, ten and fifteen kilometer runs, and half-marathons. The kids in my class ran in an average of fifteen races during the thirty-six school weeks. Stephen Pulliam ran in more than the average, including a fifteen kilometer - 9.3 miles.

Most of you will probably agree that it's exceptional for a group of fifth graders to participate in a program such as the above. These kids are exceptional in that they accomplished so much through their running: physically, academically, emotionally and socially. Stephen Pulliam is even more exceptional than the others in the class. Stephen has cerebral palsy.

The "It's 'Funner' to be a Runner!" program made a big difference in Stephen's fifth grade experience and will continue to add to the quality of his life. The program brought about a healthier and stronger child; medication was reduced and/or ended and, after years of having to wear a leg brace, he no longer has to. In addition to a great deal more, the program helped Stephen feel very special; it does this for all the kids!

The following is from my "It's 'Funner' to be a Runner!" manual which you will receive today.

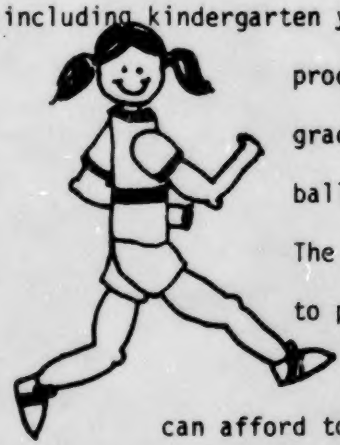
INTRODUCTION

It's "Funner" to be a Runner is a physical education/classroom program that is designed to promote sound cardiovascular fitness and respiratory efficiency, while at the same time promote sound mental, emotional and social health. While the program is in process, the children develop a positive self-image as they find themselves accomplishing physical feats that most adults would envy. For many it's the first time that they feel accomplishment in their lives—they walk, jog or run a number of laps or miles around their school field—they cross the finish line at a road race on a Saturday or Sunday. What feelings! They accomplish all of this without the direct help of an umpire, a judge, a referee, a parent or a coach. They have to do it by themselves! They know this, and when they do it they are proud.

The It's "Funner" to be a Runner program is called a physical education/classroom program because the numerous benefits that are derived from the aerobic activity are carried into the classroom. The children who participate in the program get addicted to their feelings of well-being, and they enjoy knowing that they are special. In addition to feeling this way on the field, they want to be thought of as special in the classroom. With positive reinforcement coming from the classroom teacher, all of the kids entered in the program can be made to feel as though they are special—the kids are ready for it, and as it happens it makes for a much more interesting and enjoyable day/year for the teacher.

The It's "Funner" to be a Runner program costs virtually nothing to implement. The children are always

moving and involved. The program can be used with children of all ages including kindergarten youngsters. Of course, the amount of time and the process will vary with the grade level involved. Upper grade children need a great deal less instruction on ball skills, etc., than do their younger school friends. The upper grade children have numerous opportunities to participate in Little League Baseball, Pop Warner Football, organized soccer, and the like. They can afford to spend more time on the school's running field. The running will help make them more coordinated, it will help build their confidence, and it will help make them become more aware of their bodies—all of this will help them perform at a higher level in the above listed activities.



In addition to costing virtually nothing to implement, and being appropriate for all ages, the program is also quite simple to put in effect. It basically involves the desire of an interested and concerned teacher to motivate a group of youngsters who, if given the opportunity, would love to utilize what comes naturally to most of them. The teacher then takes advantage of the kids' excitement and feelings of accomplishment as he/she utilizes the program in the classroom during math, reading, social studies, language, snack time, and any other part of the day. The program can also be extended outside of the classroom—"weekend field trips at the races!"

IT'S "FUNNER" TO BE A RUNNER: SPECIFIC STEPS FOR IMPLEMENTATION

The following specific steps for implementing the It's "Funner" to be a Runner program should be used as a guide as you begin the program. It is important that you become thoroughly acquainted with the accompanying text—you will find it to be an invaluable tool.

1. Motivate the children with the help of the videotape of the PM Magazine segment of Pete Saccone's It's "Funner" to be a Runner program. The tape is available at the district Instructional Media Center.
2. Tell the kids that their P.E. program is going to be different. They will be walking, jogging and running, and maybe entering weekend road races if they want to. Explain that they don't have to jog or run, but they do have to walk. Discuss the obvious benefits of aerobic exercise. (See pages 6 and 7 of the text.)
3. Tell the kids what little equipment they will use as their program takes shape. (See page 7 of the text.)
4. Take the children on the field and walk with them for twenty minutes. You may want to do a few minutes of stretching exercises before the walk. Either stretch or walk/jog slowly before each day's activity. (See pages 6 and 9 of the text.)
5. When you return to class explain that twenty minutes of walking covered about a mile. Ask the kids how far the class "traveled"! Pull the map down and show them that they went from here to there in twenty minutes. Explain how much fun it will be to see how far they can go in a given period of time. (See pages 10, 11 and 12 of the text.)
6. Send the parent letter home. A sample copy of the letter is in the appendix.
7. Continue to ease into the program as day two begins. Walk for twenty minutes or less for a few days. After a few days, walk and jog for the twenty minutes. A few days later, walk, jog and/or run for a somewhat longer period of time. The amount of time and pace will take care of itself. Soon, the kids see what they are capable of doing and they get excited. (See page 9 of the text: SOME HELPFUL HINTS.)

It's "Funner" to be a Walker too!

8. As you continue to ease into the program, and if you have decided to use the classroom segment of the program, begin to integrate reading, writing, math, art, etc., during the school day. (See pages 10, 11, and 12 of the text.)

9. If you decide to use the outside of school segment of the program, obtain entry forms for a given race. (See pages 13 and 14 of the text.)

10. As you implement the program take into consideration the quality of the air, the air temperature and the health condition of the children. There are very few days in El Cajon that do not allow the children to participate in the program. Also, there are very few health conditions that do not permit a child to at least walk. Remember that the It's "Funner" to be a Runner program is part of your P.E. program and no permission slips need to be obtained from a parent/guardian.

It's "Funner" if you warm-up first!

HOW TO BE AN EFFECTIVE INTERDISCIPLINARY ADAPTED P.E. CONSULTANT
OR
YOU'VE GOT TO BE KIDDING!

Janet L. Standlea, Gail B. Reynolds
Portland, Oregon

A growing number of school districts are utilizing adapted physical educators as consultants. The Portland Public Schools (PPS) is one such district. PPS implemented an adapted P.E. consultative program in 1979 based on an interdisciplinary model. This paper will describe the consultative and interdisciplinary components of the PPS model and will outline briefly how to be an effective adapted P.E. consultant.

The Motor Development Team

The PPS Motor Development Team (MDT) is an interdisciplinary team of motor specialists consisting of: adapted physical educators; occupational therapists and physical therapists. These specialists are itinerant and work together in a total team effort to best provide for the needs of children with motor impairments. The MDT provides screening, assessment, consultation and direct services. After the screening and assessment, services are primarily consultative in nature with team members working with teackers in establishing motor programs. Direct services are limited.

This paper focuses on the role and skills of the adapted P.E. consultant, therefore, occupational and physical therapy will not be discussed in detail at this time.

The Motor Development Team Adapted P.E. Consultant

The adapted physical educator consults with the physical education teacher who has an individual student or group of motor impaired students in his or her class. Consultation may consist of modeling, verbalization and/or written information concerning one or more of the following areas: information concerning the student's motor impairment and the implication for movement; assessing the specific needs of the student; determining appropriate adaptations (rules, equipment, attitudes, etc.); methods of integrating adaptations into an already established P.E. program; methods for setting up a specific program; information on writing IEPs and providing resource information.

Not all schools in the PPS district have P.E. teachers. This means that in some schools, the classroom teachers are responsible for their students' P.E. program. In this situation, the adapted physical educator consults the classroom teacher during a scheduled "block" of time to provide program planning information and to model a variety of teaching techniques through actual classroom instruction. Over a period of time, the adapted physical educator releases the primary teaching responsibility to the classroom teacher and continues as a consultant to that teacher for the remainder of the year. This classroom teacher training is called the Adapted P.E. "Block Program." More intense service is given to the younger classes (developmental kindergartens and self-contained classes, grades 1-4). These classes receive the Block Program that was previously mentioned. In these instances, the Block Program may last the entire year with the adapted physical educator providing more direct service than consultative. A resource book has been compiled by the MDT as a supplement for classroom teachers who receive Block Program services. This book is called the "Adapted P.E. Block Program Guide for Classroom Teachers." The book covers information that is used by the adapted P.E. consultant and contains activities which corresponds with and compliments the PPS P.E. curriculum.

When there are only a few students in a class or school who need motor services, consultation rather than a Block Program is given to the teacher. When students are severely involved (physically or emotionally) and there is no other person in the building qualified to instruct students with these types of motor impairments, the adapted physical educator will provide direct service.

In all of the aforementioned situations, the adapted physical educator works in an interdisciplinary manner with the occupational therapist and physical therapist when appropriate. The MDT has devised a screening tool that any one of the three disciplines can administer. An adapted physical educator may recommend from the screening results that the occupational therapist or physical therapist administer further assessment to a student. Occupational therapy and physical therapy will frequently consult to an adapted physical educator concerning activities that benefit the students' therapy needs and are appropriate in a P.E. setting. The adapted physical educator may consult to an occupational therapist or physical therapist concerning adapted P.E. activities that can be used in therapy. In some situations, one discipline is designated as the "primary" service and provides with one or both of the other team disciplines providing consultation to the primary service provider. Although an interdisciplinary approach is utilized, none of the disciplines attempts to substitute its services for another.

Consultation

Even teachers who are good direct service providers may find consultation difficult. There is no "one way" or "canned method" for consultation. This is due to the fact that one situation, consultant or teacher may be so different from the next. Some of the most valuable consultative methods are learned from a trial and error process. The following suggestions on consultation are a result of a combination of: (1) methods that have been attempted by the MDT over the years; (2) inservices that have been provided for the MDT. The suggestions that follow will not be highly specific due to the uniqueness of each consultative situation.

Consultative Skills

Things to Know Before You're There

- Possess or acquire good time management skills.
- Encompass a total picture of the situation.
- Have patience. Know that teachers must first of all be receptive to consultation, and this may take a more gradual and timely approach than you would expect.
- Be open to a variety of ways of consultation methods. One consultative approach will not apply to all teachers.
- Be receptive to ideas from the teacher.
- Be a professional who can help or assist the teacher - not an authority who has all the answers.

- See the student in the total educational setting.
- Work your "suggestions" into the existing educational setting - avoid drastic changes.
- Be clear and precise with recommendations.
- Talk with the teacher, not to the teacher.
- Use terminology that is on the teacher's level of understanding.

Once You're There

- Needs and perceptions of the student(s), teacher(s) and administrator(s).
- Determine how these needs and perceptions can realistically be met by the consultant within the particular setting (determined by the level of commitment, competency, flexibility, time availability, equipment availability and space availability by the teacher, student and administrator).
- Determine the most appropriate method of consultation for this particular setting:
    - Short term consultation
    - Long term consultation
    - Intermittent consultation
    - Modeling a program for the teacher with consultation.
    - Modeling a program with the teacher with consultation.
    - Observation and feedback (both ways).
    - Use a teacher as resource or model for other teachers.
    - Use a combination of methods.
    - Other?.......
- Make a mutual agreement with the teacher concerning the consultation plan chosen and how it will be carried out (times to meet, teacher responsibilities, consultant responsibilities, duration of consultation, etc.). Putting this in writing is a good idea.
- Implement the consultation plan using the skills previously mentioned in "Things to Know Before You're There."
- Emphasize teacher participation and encourage an atmosphere of co-workers rather than teacher-learner.
- Offer a variety of resources for the teacher to use (i.e., books, films, handouts, video, community and national organizations, district programs, etc.).
- Be responsible and prompt with consultation meeting times.
- Prepare the teacher for termination of the current consultation plan.

Afterwards

- Leave activities, etc., for the teacher to use in carrying on the program.
- Provide follow up consultation and monitor the program.
- Be available in case of a crisis.
- Evaluate the effectiveness of the consultation.
- Assess the need for further consultation.

Interdisciplinary Consultation

- Have a working knowledge of the other discipline(s) that you are consulting to.
- Be aware of the concerns that the other discipline(s) have for the student.
- Discuss the needs of the student(s) as a whole.
- Discuss the type of motor program that would fit into the student's current educational program.

- Determine the areas of overlap between adapted P.E. and the discipline you are consulting to (pertaining to the student's needs).
- Inquire about the type of program the other discipline is providing for the student (time frame, activities, etc.).
- Make recommendations concerning activities, behaviors, adaptations and/or equipment. (These may be suggestions concerning activities that are currently used by the other discipline or new activities that can easily be incorporated into the existing program.)

Making It Work

A general "state of awareness" must occur to pave the way for a smooth integration of an adapted PE consultation model into the school district. This "state of awareness" includes being aware of the motor needs of students in the district, the intent of PL 94-142, the need for consultants, understanding the consultative service delivery model and the process for accessing those services for the students. This "state of awareness" must occur at the district administrative level, and then passed on to principals, classroom teachers, PE teachers, parents and the community. The acquisition of such a process will lend itself to a greater understanding of the reasons for the existence of the program and support for its implementation.

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BUCK ROGERS, MR. SPOCK AND ADAPTED PHYSICAL EDUCATION -- A CRYSTAL BALL INTO THE NEXT CENTURY

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Adapted physical education, under a number of names, has been an integral part of the physical education heritage for well over a century. Adapted physical education is not the new kid on the block and unique to The Education for All Handicapped Children Act (PL 94-142) as some professionals want us to believe. On several occasions in the United States prior to enactment of PL 94-142, adapted physical education received some emphasis--late nineteenth century when many physicians were actively involved in physical education; shortly after World War I; and again immediately after World War II. Adapted physical education has been an integral part of school and college/university accreditation standards for over thirty years, required in the public schools of at least one state for over a half century, and on some curriculum score cards and evaluative instruments for over fifty years. Current emphasis and attention on physical and motor development of students with handicapping conditions were initiated during the early 1960's when much attention was given to physical education, recreation and sport programs and related activities involving mentally retarded participants.

Enough reminiscing; this is a look forward and to the future, not a historical treatise of the past. What does lie ahead for adapted physical education? Where are we going? What will adapted physical education be like during the last decade and a half of the twentieth century and into the first ten years of the twenty-first century? Do you remember when Buck Rogers and Flash Gordon were considered unrealistic comic strips? Well, here we are on the brink of really entering the worlds of Buck Rogers and Flash Gordon along with those of Mr. Spock, E.T. and R2D2. There are many implications for each of us interested in contributions adapted physical education can make to the growth and development, good and welfare of individuals with handicapping conditions.

Technology will continue to contribute increasingly to progress and opportunities for individuals with handicapping conditions. Computers, biomechanics, cinematography, satellite communications, biochemistery and sports medicine are just a few of the exciting areas with virtually unlimited potential for enabling persons with handicapping conditions to help themselves and gain greater degrees of personal independence. This potential is great for physical education, recreation and sport programs and related movement activities.

We are very much in a computer age complete with satellite systems making every part of the world close to and a neighbor of all other countries. Full utilization of latest in this technology must be brought to bear on physical education, recreation and sport programs involving individuals with handicapping conditions, regardless of types or severities. In addition to obvious uses---scheduling, record keeping, assessment information, administrative functions, computer assisted instruction---innovative uses of computers in performance of physical and motor activities must be fully explored. For example, easily installed mercury and microswitches and photoelectric cells can be used to control computers for various purposes while individuals actually perform different physical and motor activities and skills. Both visual---smiley faces on the screen---and auditory feedback---voice synthesizers---add to interest and motivation of individuals with handicapping conditions as they perform physical education, recreation and sport activities. Computer sport games offer many possibilities and opportunities for learning about these activities as well as interesting means to further such characteristics as reaction time and hand-eye coordination and control. The sky is the limit; innovation and resourcefulness leave very little out of the realm of possibility for all populations.

It seems appropriate for persons interested in adapted physical education to draw from approaches successfully used in the elite sports field. For example, biomechanics, computerization and cinematography have effected a harmonious marriage. Ideal execution of skills, movements and motor patterns are determined through biomechanical analyses. This information is then placed in a computer and adjusted according to anthroprometrical and other personal characteristics of the individual. Films of this individual executing these same skills, movements and motor patterns are analyzed and compared to the biomechanical ideal for this particular individual. This process has many implications for and applications to physical education, recreation and sport activities involving participants with handicapping conditions. Think of contributions this process can make in bringing about more effective and efficient executions of fundamental motor skills and movement patterns, physical and motor fitness components, and skills in aquatics, dance, individual and group games and sports, and lifetime sport activities. Individualization and personalization will be more than hollow rhetoric. People will finally be able to recognize and realize that form execution by individuals with different handicapping conditions should not and must not be looked upon in the same ways among each other or as for able-bodied persons. Amputees in general, for example, do not perform swimming strokes or locomotor patterns---walking as well as running---in the same ways as paraplegics. Individuals with different types and combinations of amputations are quite different in their execution of these same skills. In fact, individuals with the same level, type and degree of handicapping condition will not execute physical, motor and sport skills in exactly the same ways.

Recent reports based on myographic studies in Australia have shown consistency in neuromuscular patterns of severely cerebral palsied persons, even though these neuromuscular patterns were quite different from patterns for similar movements by able-bodied persons. These findings, too, need to be applied as work in physical education, recreation and sport activities are done with cerebral palsied and other populations of persons with other handicapping conditions.

Results from a ten year longitudinal study in Belgium offer many exciting possibilities, relating to heretofore unrecognized potential of both paraplegics and quadriplegics. Initiated as a project to compare arm form and stroke execution by Olympic and Olympiad swimmers, continued analyses and review of films revealed both Class 2 (quadriplegics) and Class 3 (paraplegics) kicking while swimming! In addition to obvious implications for existing classification systems (i.e., systems appropriate for land based activities such as track and field and basketball may be quite inappropriate for water based activities) applications to rehabilitation and regaining use of previously thought to be nonfunctional parts are mind-boggling!

Such possibilities have recently been reported from Wright State University (Dayton, Ohio). Leg muscles of paraplegics with no previous use of these limbs have been stimulated by electrical impulses. Strength, frequency and exact sites of electrical impulse applications have been computer controlled. Subjects have been able to pedal bicycle ergometers as a result of this process. While still in experimental stages, exuberance and optimism must continue to be guarded; but even the pessimist must admit that the future appears to be increasingly bright. Implications and applications for attaining "the life worth living" so eloquently spoken of by Helen Keller through active participation in physical education, recreation and sport because of such scientific advances is great.

Still another breakthrough in Canada relates to unknown and untapped potential of paraplegics. Myographic study of the quality of muscular function of Olympic and Olympiad athletes has been quite revealing. Analyses of slow twitch muscle fibers of Olypiad athletes were shown to be in the same range as this type of muscular function in average Olympic athletes. On the other hand, fast twitch functions of Olympiad athletes were in the same range as superior Olympic athletes. Although elite athletes were studied, implications and applications to all paraplegics, as well as to quadriplegics and others with physical and orthopedic conditions, are great. Direct impact for more active lives is equally promising and optimistic.

Treadmills and bicycle ergometers are being adapted so individuals with different physical and motor abilities and disabilities can use these devices for training, conditioning and so they can serve as subjects in research projects on fitness and motor development in general and of persons with handicapping conditions in particular. Many of these devices are being made available very inexpensively so that individuals, as well as schools, recreation departments and privately sponsored groups can afford them.

Voice synthesizers--independent units as well as those used in conjunction with microcomputers--are realities and provide ways for individuals without expressive speech to communicate directly and quickly with others in any situation. Not only do these devices add to the individual's ability to communicate, but make him/her a part of, not apart from, groups. Social competence and acceptance increase as do the individual's ability and opportunities to participate more actively in physical education, recreation and sport activities. These same voice synthesizers can be used in conjunction with microcomputers to communicate with and motivate individuals as they participate in various physical education, recreational and social activities. As important as fully capitalizing on and utilizing this ever increasing technology, it is not nearly so vital as human factors. People, not objects, stimulate action and activity and make things happen. Psychosclerosis is slow to cure! But eliminating hardened categories must remain a high--number one--priority over the next quarter century. Certainly great progress has occurred during the last fifteen years in breaking down barriers, but overall this has not moved fast enough, with consistency, and been permanent. Great variation can be found from place to place, intra as well as inter-disciplines.

Definite backlashes against individuals with handicapping conditions have been noted--among professionals as well as the lay public. Some individuals have predicted that by the mid-1980's segregation and separation--not integration and mainstreaming--will again be the dominant program organizational pattern for persons with handicapping conditions. Discussions with too many regular physical educators, community recreation specialists and coaches unfortunately reinforce this observation. Cool heads must prevail as we continue to see why such backlash is occurring.

Implications for both preservice and inservice preparation programs are obvious. It is vital that specialness in dealing with these populations be eliminated, eliminated and not minimized! Every undergraduate and graduate student in physical education, recreation, coaching, dance and related activity areas must have information about these populations infused with every professional course. In this traditional handicapping conditions can and will be looked upon as types of differences that must be dealt with in individualizing and personalizing the full gamut of physical, motor and recreational experienced for everyone. For teachers, leaders and coaches already in the field, appropriate and ongoing inservice programs and activities must be continued. Such inservice emphasis will remain a need and high priority until infused approaches rather than special courses become the rule, not the exception. These same approaches must be introduced and become routine in special training courses for aquatic activities, first aid, CPR, skiing, to name but a few.

Infusion in professional preparation programs and specialized training activities does not eliminate need for specialists in adapted physical education, adapted aquatics and related areas, although it reduces demand for numbers and changes emphasis of roles and functions of such specialists. Individuals, who for whatever reasons cannot safely, successfully or with personal satisfaction take part in regular programs, do need attention of such specialists. However, numbers are not nearly as great as advocated by some who are apparently more interested in perpetuating their programs and themselves, not meeting real interests, needs and demands of populations being served. Specialization in adapted physical education is and will continue to be a legitimate graduate specialization. An important and needed role for such a specialist is that of a resource to work with and serve other providers of services, paraprofessionals as well as professional. Such an approach has been used successfully in some programs which should and will expand as the pattern of the future. This approach is alos consistent with the concept of differential staffing patterns which include master teachers, activity specialists, technicians, paraprofessionals, peer tutors, student assistants and volunteers. Many factors will stimulate different staffing patterns for programs involving severely and profoundly mentally retarded and severely multiply involved persons. Because of extremely small increments of progress that come very slowly with these populations, teachers, leaders and coaches with less--not more--education and training will become common place. These individuals will be directed and supervised by well trained and highly competent master teachers who do the bulk of assessment, diagnostic and prescriptive tasks. This could be still another role for the resource adapted physical education specialist.

Greatly influencing these directions are greater consumer involvement--active participation by individuals with handicapping conditions in decision/policy-making and leadership roles. Perceptions of and directions advocated by persons with handicapping conditions are often quite different from those of able-bodied persons, including professional providers of services. Individuals with handicapping conditions must be actively involved in decisions that so intimately affect their lives and destinies. This cannot and must not be token involvement but be real, meaningful and sincere. Providers of services must take the initiative to insure positions for consumers on advisory committees, boards of directors and governors, investigative task forces and in consultive capacities. Additional opportunities and encouragement to seek leadership positions as physical education teachers, recreation specialists and coaches as well as for administrative and supervisory positions in these areas must be systematic, planned and increased. Adversarial attitudes emphasizing us and them must be changed and become we to insure continued progress and movement that is needed for enhancing quality of life of these populations through active participation in all aspects of physical education, recreation and sport activities.

To achieve these ends, professionally we must reunite as a unified whole. Adapted physical education is not a separate and distinct discipline from physical education--it is an integral and important part of physical education with its very roots, fundamental beliefs and foundations embedded in and from physical education. Efforts by a small minority of college/university adapted physical education specialists to foster adapted physical education as its own discipline must be squelched. Such splintering and proliferation are major reasons for the tenuous positions of physical education in the schools today.

Many forces are pulling in many different directions so that the public is confused and too many professional self-fulfilling prophecies with us. Adding to this confusion are various names now being advocated and actually used in place of physical education. These are changes that have been harmful, not helpful, to our professional image and position.

Adapted physical education has its roots deeply seated in physical education--it is vital that the prodigal child which has received much attention and publicity in recent years, and tended to wander, lead the way back to the flock as a stimulus for other specializations to do the same. Here we see still another subtle and negative influence of the medical model which must be countered and attacked vigorously for educational programs and activities.

Acceptance and clarification of therapeutic recreation must be addressed. Distinctions between recreation that is therapeutic and therapeutic recreation are clear and ironically better understood by consumers than many professionals! Self-fulfilling prophecy again rears its ugly head. Therapeutic recreation, just as adapted physical education and special education, is not for everyone with a handicapping condition. It is clearly and distinctly a therapeutic modality--as are dance, art, music, activity, physical and occupational therapies. The majority of individuals with handicapping conditions want and need recreation for the same reasons and purposes as able-bodied persons--diversion, change of pace, fun, enjoyment, pleasure in attaining higher quality and more satisfying lives.

There are many other areas that need to be dealt with, problems attacked as we approach the next century. These include such things as--

- Explore ways to develop and maintain higher physical fitness levels of severely and profoundly mentally retarded and multiply involved individuals considering such means as exercising them on devices (i.e., electronically controlled bicycles or treadmills) and stimulating and controlling muscle action and activity through computers.
- Develop, analyze and apply physical, motor, personality, emotional and social trait profiles of individuals to determine characteristics that make it more likely individuals will succeed (or fail) in certain physical education, recreation and sports activities.

- Explore patterns and approaches of differential staffing patterns consisting of highly trained and competent professional providers of services, activity specialists, paraprofessionals and volunteers who serve specific technical roles on the team.

- Capitalize fully on interest in and motivation developed through participation in physical and motor activities by individuals with handicapping conditions for teaching and/or reinforcing concepts and principles in other educational areas; a physical education core has much to say for it, especially with individuals not readily turned on by and tuned into academic areas and intellectual pursuits.

- Make concerted and concentrated efforts to continue and increase international exchange and interchange on regular and ongoing basis. In this process, it is vital to use the great variety of information and materials becoming increasingly available world-wide. Materials centers, information systems and resource networks must coordinate and cooperate to reduce duplication of efforts and activities. UNESCO and various international organizations must take the leadership roles in bringing about such cooperative efforts and activities.

- Follow patterns established in Alberta (Canada) by integrating individuals with handicapping conditions in high level, prestigous sport competitions. Other trends and happenings around the world--Challenge Cup in which athletes with different levels and degrees of spinal cord injuries compete equitably against each other; National Wheelchair Basketball Association affiliating with and being accepted by the national governing body for basketball in the United States; formation of the Handicapped in Sports Committee by the United States Olympic Committee--suggest a bright future. Will we see events for athletes with handicapping conditions in the Olympic Games? Some feel that this could happen before the turn of the decade, much less the turn of the century! Medley relays in track and swimming where teams consist of able-bodied and disabled participants are realistic expectations for the future, the near future.

There are really no impossible dreams. Yes, the past is prologue. History can be a mirror of the future. Let us reject nothing merely because it is old. Continued progress must be one of our most important and ongoing goals. As we look forward and onward to tomorrow, it is vital that we benefit from successes and failures of yesterday. Only by such an ongoing process can we meet our professional challenges, serve those individuals as we are dedicated to assisting and attain pinnacles of success for which we are all striving.

It is difficult to say that adapted physical education is still in its childhood since it has been a part of our profession for such a long period of time. But in its relationships to many other factors, adapted physical education is truly a babe in the woods, a babe suffering some severe growing pains. As we look at the future, it is vital to see that growth continues in ways that enhance the growth and development of all children, and in ways that are harmonious and consistent with the best traditions, practices and directions of the entire physical education profession. To avoid a tumultuous adolescence we must put individuals served, not our own professional interests and personal benefits as primary and foremost. To do otherwise is not only unthinkable, but anything but professional.

PHYSICAL RESPONSE EDUCATION SYSTEMS: ACUPRESSURE AS A METHODOLOGY FOR PROMOTING HUMAN DEVELOPMENT

Jeanne Hubert St. John, Ph.D.
Project Director
Santa Cruz County Office of Education

EXCERPTS FROM SELECTED TEXTS

" . . . our bodies are in fact made up of nothing but energy in constant transformation, it is easier to understand how subtle nonphysical, energetic influence such as emotions and thoughts can have a direct influence on our physical functioning, just as our physical functioning can have an effect on our emotional and mental experiences."

JACK SCHWARTZ
Human Energy Systems, Human Energies and Health Maintenance, 1980.

"Although everyone has this amazing power of touch, its release needs a catalyst. The most powerful one is love or compassion. That is why Jin Shin Do, which revolves around a traditional Japanese acupressure art, literally means 'The Way of the Compassionate Spirit.'

"In ancient times almost everyone in the Orient knew how to use some form of acupressure to help their family and friends through the power of touching. Acupressure -- literally 'finger pressure'-- is very simple to learn and practice. Use of this and related oriental health arts can help us recover the ability to help ourselves to happier, healthier and freer lives."

IONA TEEGUARDEN
Acupressure Way of Health - Jin Shin Do, 1978.

August 1982

"Because it is so precious and basic to life, this Vital Force, the Chi Energy asks of every living creature a way of life that preserves it. Vitality and energy are considered the foundations of life; in order to keep them flourishing they must be protected and the life-giving force must rule. There is a path to caring for this Life Force on a human level that speaks of balance and harmony. The sages of the ancient classics knew the secrets of life because they followed this path. It is called the way, the Tao. This Tao has been spoken of as the tranquility at the center of all disturbances."

DIANE M. CONNELLY, Ph.D.
Traditional Acupuncutre - The Law of the Five Elements.

"Learning research finds that anxiety is the great enemy of intelligence and development. So its increase can be seen as an automatic index of a decrease in intelligence.

"Our anxiety is not some passing emotional disturbance, but a biological imbalance flashing its danger-to-survival signals. The result is an increased demand for and production of technological 'advances' to 'extend our powers' and so relieve that anxiety. . . Anxiety aligns our brains into a focus on and service of that anxiety state."

JOSEPH CHILTON PEARCE
The Bond of Power, 1981.

"Love is the most universal, formidable and mysterious of cosmic energies. In this hypothesis (which conforms with the findings of psychoanalysis) love is seen as a primitive and universal psychic energy which gives significance to everything around us.

"Love is a sacred reserve of energy, and the very blood stream of spiritual evoluation; that is the first discovery we can make from the Sense of Earth."

TEILHARD de CHARDIN
Building the Earth

SANTA CRUZ COUNTY OFFICE OF EDUCATION
RICHARD H. VAN DEREN, SUPERINTENDENT
809-H Bay Avenue, Capitola, CA 95010
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PHYSICAL RESPONSE EDUCATION SYSTEMS (PRES)

ACUPRESSURE AWARENESS WORKSHOP

I. Some Basic Assumptions:

A. The body is a learning tool.

B. Behavior is a learned response.

C. Inappropriate response patterns lead to dis-ease, dis-stress, pain, scattered thinking, and unfocused activity.

D. Sensory/psycho-motor integration is a basic building block of learning.

E. Physical and energy blocks can prevent psycho-motor, cognitive and affective development. A balanced flow of human energy promotes integration of learning in all areas, as well as reducing stress and anxiety.

F. Acupressure supplements and complements medical treatment and therapies, psycho-sensory motor programs, instructional and vocational activities, and promotes social/emotional development.

G. Acupressure techniques are in the psycho-motor domain, and are being adapted from ancient Oriental practice to be used as a specialized curriculum for Special Education, General Education, and by the public for stress reduction and health maintenance.

II. Demonstration and Application of Technique:

A. Energy Exercises.

B. Neck & Shoulder Acupressure Release (see illustration, page).

III. PRES Project History:

A. 1979-1980 School Year

1. Pilot Study - 12 students received 6 weekly sessions each from a professional therapist.

B. 1980-1981 School Year

1. Intern Project - 15 students received 8 weekly sessions each from newly trained volunteers.
2. Research Proposals - developed and submitted.
3. Staff Development Series:
   11 Orientation Workshops, reaching 310 staff and parents
   9 Introductory Workshops, reaching 300 staff and parents
   2 Conferences. reaching 450-500 administrators (one national, one State

C. 1981-1982 School Year

1. Community Volunteer work continues with students.
2. Staff Development Series:
   25 Orientation Workshops
   5 Introductory Workshops

3 Follow-Up Workshops
10 Contract Workshops with districts in California, Nebraska, New York, and New Mexico.
Series of Seniors Workshops, at Senior Centers, Nursing Homes.

3. Conference Presentations - at 14 regional, national, and international professional conferences including:
   - World Futures Conference, Salt Lake City
   - Congress of the International Association for the Scientific Study of Mental Deficiency, Toronto
   - National Conference on Physical Activity for the Exceptional Individual, San Jose
   - "Joy of Learning," Holistic Education Network, San Diego
   - California Staff Development Conference, Asilomar
   - Association for Supervision & Curriculum Development, Anaheim
   - California Teachers Association, State Conference, Burlingame
   - Annual Staff Development Conference, Calif. Special Education Resource Network, Sacramento

4. Publications (See ordering information below)
   - Acupressure Awareness Workshop Booklet
   - Introductory Workshop Booklet
   - Final Report, Pilot & Intern Studies
   - Videotape to accompany Acupressure Awareness Workshop

PRES Materials Available

$ 1.00	Illustrated Workbook from Acupressure Awareness Workshop	8 pages
2.50	Illustrated Workbook from 6-Hour Introductory Workshop	18 pages
5.00	PRES Final Report: Pilot & Intern Studies (including 26 Case Studies)	125 pages

2-Hour and 6-Hour Workshops are available; fees based on number of participants, time and distance. Write or call for further information:

JEANNE HUBERT ST. JOHN, PH.D.
Project Director

SANTA CRUZ COUNTY OFFICE OF EDUCATION
809-H Bay Avenue, Capitola, CA 95010

(408) 476-7140

Announcements and schedules of workshops to be held will be sent upon request. Advise if you would like to be on the mailing list for your area.

AVAILABLE DIRECT FROM PUBLISHER: RELAX! WITH SELF-THERAP/EASE, an illustrated handbook on self-applied acupressure, by Bonnie Pendleton and Betty Mehling.

Order from: California Publications, Inc., Box 14, Calabasas, CA 91302
$16.00 (includes $1.00 mailing cost) Tele: (213) 880-4181

Volume 7 • Number 4 • May 1982

CALIFORNIA
STATE STEERING COMMITTEE FOR
CURRICULUM DEVELOPMENT AND
PUBLICATIONS

CALIFORNIA CURRICULUM NEWS REPORT

Santa Cruz County Superintendent of Schools Richard Van Deren has published a final report on more than a year's experience with **Project PRES (Physical Response Education System) which uses 6000-year-old acupressure techniques with special education students** (see *California Curriculum News Report*, Vol. 6, No. 3, February 1981).

Following two encouraging pilot studies using a professional acupressure practitioner, the project was continued using 15 newly trained volunteer interns. Results were most positive, with gains again reported in all four areas—cognitive and language, psychomotor, social/emotional, and health. Since spring 1981, enthusiastic senior citizens have also participated in classes. A curriculum has been developed especially for seniors and seniors' workshops have become part of the County Office educational services. Every California County Office's Special Education Department will soon receive one copy of the final report.

A team of presenters has been trained within the Santa Cruz County Office staff to offer four types of workshops in Santa Cruz County and elsewhere: (1) a two-hour orientation workshop, (2) a six-hour introductory workshop, (3) a four-hour practice and review session, and (4) a five-day in-depth workshop. Twenty districts and/or county offices in California, Nebraska, New Mexico, and New York have participated in the orientation workshops. Over 300 teachers, aides, administrators, nurses, and parents have participated in the introductory workshops. A five-day workshop was presented for the Los Angeles County Special Education Department. Many presentations have been made at state, national, and international education and health conferences. Interest and enthusiasm continue to grow, with many reports of unexpected positive results with all levels of school children, their parents, and staff.

PRES curricula for general and special education use are being developed and workbooks are being edited. Consultation is available for districts and county offices to train staff at all levels of education: (1) to use these techniques on themselves for stress reduction, (2) to train teachers and others to use acupressure with students, and (3) to integrate acupressure with other sensory-motor/psychomotor programs.

Project PRES publications now include *PRES Orientation Workshop*, handout (no charge); *Experiencing Energy: Acupressure for Educators*, workbook ($1.50); *Project PRES Final Report* ($4.00). To request copies of the above, or to request consultation, contact PRES Project Director Dr. Jeanne Hubert St. John, at the Santa Cruz County Office of Education, 809 Bay Ave., Capitola 95010, (408) 476-7140.

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INTERN STUDY - CHART II

OUTCOMES

CASE STUDY #	HEALTH	SENSORY-MOTOR	COGNITIVE & COMMUNICATION	PERSONAL/SOCIAL
I-1 Age 18 Downs*	Bedwetting decreased slightly.	Overall body tension decreased. Fewer nervous gestures, less rigid movement. More willing to do task. More focused on task.	Initiated appropriate use of word "acupressure" in sessions. Recognized driveways and alleys on walks as places to stop and wait for assistance. More responsive to questions.	Less withdrawn.
I-2 Age 19 TMR *	Eyelids less red, wavering eye movements less frequent.	Slightly more attentive and relaxed.	Began speaking spontaneously several times daily. Responses became quicker, clearer.	Able to hold own with other children at home--more assertive. Also slight increase in initiating spontaneous interactions with peers.
I-3 Age 6 CP *	No ear infections. Allergy condition disappeared for several weeks and was thereafter much reduced.	Motor control, especially legs, improved. More fluid, smoother movement. Less easily frustrated, concentration improved.	Distractibility, frustration, and conditional listening improved sporadically.	Fewer and shorter outbursts. Major improvement in sociability. Began initiating play activities with peers.
I-4 Age 6 SDL *	Mannerism of tensing arm and bringing up to mouth became a rare occurrence.	Draws more complete self-portrait, Longer attention span, shapes drawn have better form and size. Calmer.	Improved attention span--more willing to do homework.	Less easily frustrated in doing household chores. Fewer angry outbursts.
I-5 Age 9 SDL *	Bedwetting less frequent (1 x per 2 wks), as relaxed enough to use bathroom before bedtime.	More fluid gross movements. Handwriting more legible. Can now clap a beat to music with rhythm.	Can blend c-v-c- sounds, use final 's'. Rote questions less frequent, appropriate questions more often.	Completes tasks more often.
I-6 Age 13 SH *	Drowsiness and lethargy improved slightly overall. Alert, calm and responsive in the training sessions.	Not evaluated. Incomplete documentation.	Visual and auditory memory skills improved briefly. Ability to follow directions improved briefly. Verbal responses quicker and clearer in both Spanish & English.	Rectal hygiene habits improved.
I-7 Age 12 TMR *	Incidence of wetting self decreased from 3x/week to 1x/week. Seizure frequency decreased slightly, as did frequency of bruises and body tremors.	Greater motor control in fine motor activity. Grove movements a little more fluid.	Able to copy his name, and less resistant...to participating in activities.	Angry outbursts decreased. increased playfulness, calmer and more willing to be touched.
I-8 Age 9 OH *	Major improvement in back and shoulder pain.	Slight increase in eye coordination when tracking objects.	Attitude toward academics improved. Began retaining work learned and building on skills acquired. Reading, math and handwriting improved. as did ability to follow verbal directions and willingness to try new academic tasks.	Frequency of requests for adult attention decreased. Talked about feelings openly and cried for first time in years. Learned training routines for backache and practiced regularly at home.

* Key to Handicap Symbols:

Downs = Downs Syndrome
TMR = Trainably Mentally Retarded
CP = Cerebral Palsy
SDL = Severe Disorders of Language
SH = Severely Handicapped
OH = Orthopedically Handicapped

BASIC NECK AND SHOULDER RELEASE

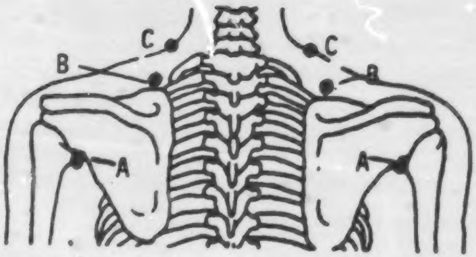
With the receiver either sitting, or lying comfortably face-up in a relaxed position, the giver applies fingertip pressure at the points indicated in the diagrams (left hand on left side, right hand on right side). The receiver breathes deeply throughout, and sits or lies in a relaxed manner, (a pillow under the head may be desirable if prone).

In regular acupressure sessions, the receiver lies on a table, but the method works easily when receiver is sitting or lying comfortably legs extended, arms folded. Receiver guides giver to the most sensitive spot in area.

Step 1 Place fingertips under the outside of the shoulders, at Points A. Curl fingertips and press gently.

Step 2 Press fingertips at hollows at top of inside shoulder blades, at Point B.

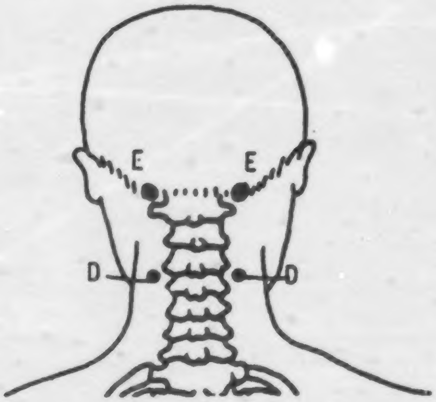
Step 3 Press trapezius muscle at base of neck, top of shoulder, Points C.



Step 4 Press mid-way in neck, outside spine, at Points D.

Step 5 Both hands hold Point E, the hollows at the base of the skull.

Giver uses comfortably firm fingertip pressure, holding each set of pressure points for 2 to 3 minutes, or until the muscle relaxes. With practice, one learns to feel the pulse at the points and eventually "balance" them into synchronous pulsations.



This basic five-step acupressure pattern is a very important one. This pattern or a variation of it, is used at the end of almost every acupressure session. It is the good old back-and-neck rub we have all enjoyed, but this teaches where and how to apply pressure for the best results!

(Borrowed from ACUPRESSURE WAY OF HEALTH - JIN SHIN DO,
By Iona Teeguarden, 1978.

RESPONSES TO P.R.E.S. FROM PARENTS, TEACHERS, AND ADMINISTRATORS

- From Shirley Foster, Teacher in Autistic Minors Program, Santa Cruz County Office of Ed. . . .

"I heartily endorse the P.R.E.S. Project because:

1. Positive change begins immediately.
2. Almost every handicapped child needs to be taught to relax.
3. Relaxation brings about body awareness.
4. Self-esteem is strenghtened because the child feels better and he thus feels better about himself.
5. There is a demonstrable carryover from P.R.E.S. to all areas of school activities, including academics, self-help skills, socialization, behavior."

- From Timothy N. Kleiner, Group Home Houseparent, Soquel, California . . . .

"J. is an emotionally disturbed, 13-year-old aphasic student with many phases of his mental development at the 6-7 year level. He has been said to be 'the closes thing to an animal that ever came through juvenile hall.' At the onset of the six P.R.E.S. therapy sessions, our agency was seriously considering terminating him, as he had pressed the children, adults and school authorities who came in contact with him to the limits of their patience and tolerance.

"Since that time there has been a steady improvement in his behavior and demeanor to the degree that he was able to spend his first Christmas in three years with his natural parents and the agency is considering sending him home permanently in the near future.

RESPONSES TO 6-HOUR INTRODUCTION TO ACUPRESSURE WORKSHOP

COMMENTS BELOW ARE SOME INDIVIDUAL RESPONSES AND REACTIONS FROM WORKSHOP EVALUATIONS . . . .

- *"I didn't expect to be able to do PRES on others so soon. I thought much more practice and knowledge was necessary. I like very much the simplicity of its implementation and the immediately available results."*

- *"Peace - energy. I'd thought only to release stress. This relaxed energy is marvelous. Will use the techniques learned on myself and family. Would like to integrate methods into group counseling sessions."*

- *"I enjoyed the workshop very much...felt relaxed. Certainly can use the information and combine with other class activities. It will make them even better."*

- *"The handouts, demonstrations and lectures were all very complete, comprehensive, and overall, excellent."*

- *"This workshop fulfilled my expectations totally as far as utilizing the 6 hours to give me a marvelous experience--and a solid taste of something I want more of. I think the benefits of acupressure are limitless--a joy to share with others. The workshop was presented in a truly loving, warm, and yet totally professional way."*

- *"I did not realize acupressure would be self-administered. How great to get my own pressure benefits. Would like to have educational inservice for special ed teachers and parents of special ed teachers as a first step for use in my program."*

- *"I'm looking forward to feeling the growth and expansion as I become used to being touched and touching others. I can feel the power of people working together to energize and heal each other."*

- *"I plan to integrate relaxation/calming techniques with my regular curriculum which emphasizes movement and child involvement (use of hands) in every aspect of the learning environment."*

- *"I feel good about learning something to attack, defeat 'bad' physical symptoms without having to use drugs, medication. I hope to use some of the energy movement with the children at school."*

- *"I did not expect to learn as much about the process as I did, and did not expect to get so much at the session for myself."*

- *"Very good introductory workshop. I feel they are often just a tease. But this really gave me something to work with. Some good written material so that I don't have to rely entirely on my memory."*

OH, THAT VERSATILE BRUININKS-OSERETSKY!

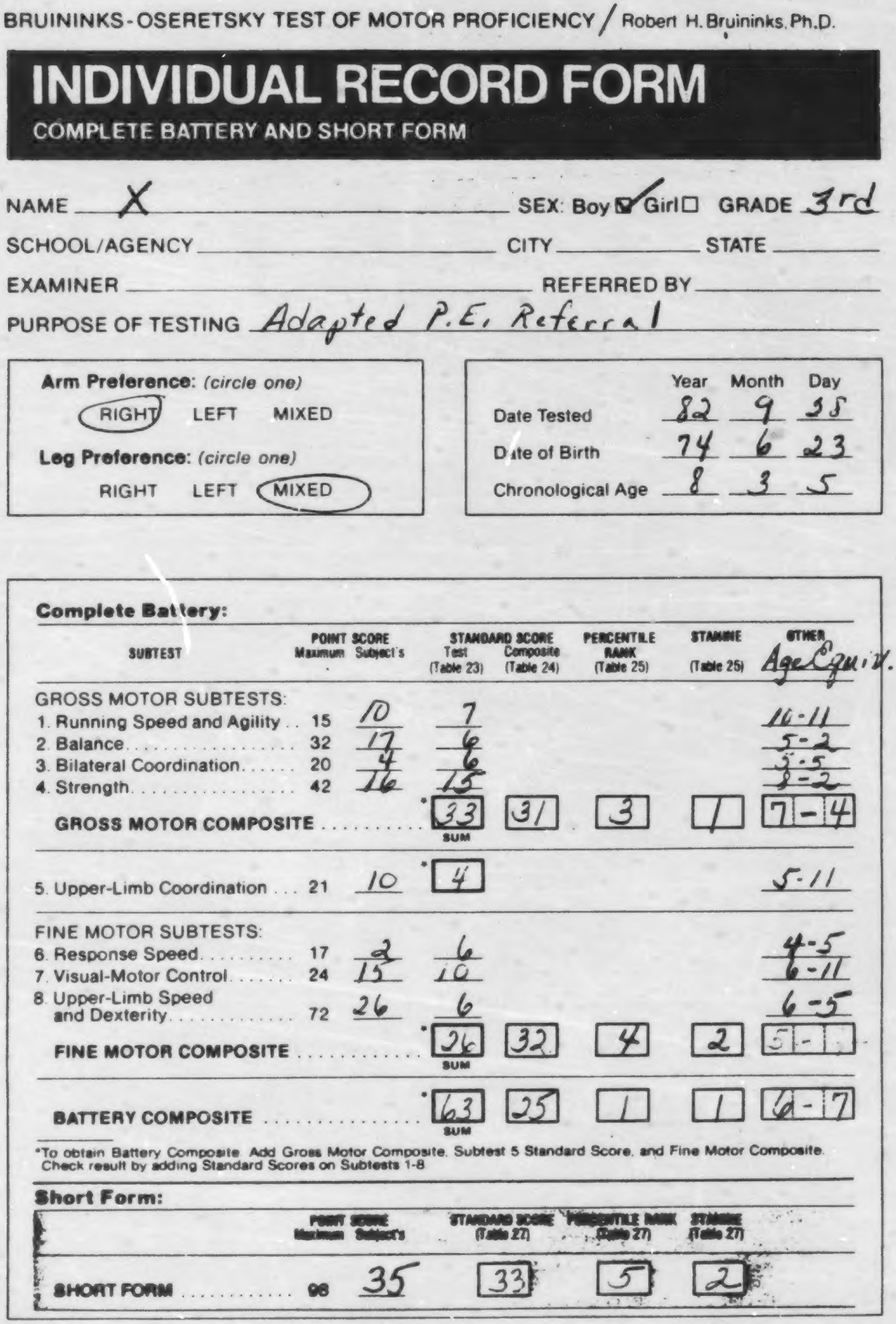
Joanie Verderber
Gail Lewis Crotty

The interdisciplinary approach to diagnosing an individual's special needs emphasizes that no one discipline is exclusive. Motor responses which are commonly used as the indicators of one's functioning ability may be observed by professionals from different fields during their assessment of the same individual. Over the past several years, the Bruininks-Oseretsky Test of Motor Proficiency (B.O.) has been gaining popularity with several disciplines. Some physical education specialists use the battery to compile motor profiles. Adapted physical education specialists, occupational therapists and physical therapists may use the information gathered from the motor profiles to identify areas which need remediation.

Complete and accurate assessment of an individual's motor abilities is complex; no known assessment device identifies all areas of motor performance. While the eight subtests of the B.O. address several components of motor performance, the battery's effectiveness is enhanced when used in conjunction with other assessment tools. The selection of these devices is dependent upon the examiner and the information required to set up a given program.

Each subtest's score (Figure 1) reflects the subject's performance on test items which range from one to nine in number with one to seven trials per item (Figures 2 through 6). This variability in structure provides the specialist with degrees of information on the subtests, therefore, further assessment may be warranted. Figure 7 identifies some assessment tools which may be used in conjunction with the B.O. either to provide supplemental or complimentary information. To assist in this process, a team approach may be employed when relating similar data gathered by specialists such as the special education teacher, psychologist, adapted physical education specialist and occupational therapist.

The versatility of the B.O. is also evident when administering it to assess motor performance, for the examiner often gleans information other than that specifically intended by the author. Since motor performance is perhaps the most effective measure of an individual's sensory integrative function, a battery, comprised of various measures of motor ability, would be of assistance in screening for sensory integrative disorders. The manner in which an individual approaches the performance of a given task may provide the examiner with information suggesting a possible deficit in this area. While the B.O. was not designed to assess sensory integrative functioning, as, for example, was the Southern California Sensory Integration Test (SCSIT), observations made during administration of the battery may warrant further assessment of sensory integrative performance.



BRUININKS-OSERETSKY TEST OF MOTOR PROFICIENCY / Robert H. Bruininks, Ph.D.

INDIVIDUAL RECORD FORM

COMPLETE BATTERY AND SHORT FORM

NAME X SEX: Boy ☑ Girl ☐ GRADE 3rd

SCHOOL/AGENCY ______ CITY ______ STATE ______

EXAMINER ______ REFERRED BY ______

PURPOSE OF TESTING Adapted P.E. Referral

Arm Preference: *(circle one)*

[✓ RIGHT] LEFT MIXED

Leg Preference: *(circle one)*

RIGHT LEFT [✓ MIXED]

	Year	Month	Day
Date Tested	82	9	28
Date of Birth	74	6	23
Chronological Age	8	3	5

Complete Battery:

SUBTEST	POINT SCORE Maximum	POINT SCORE Subject's	STANDARD SCORE Test (Table 23)	STANDARD SCORE Composite (Table 24)	PERCENTILE RANK (Table 25)	STANINE (Table 25)	OTHER Age Equiv.
GROSS MOTOR SUBTESTS:							
1. Running Speed and Agility	15	10	7				10-11
2. Balance	32	17	6				5-2
3. Bilateral Coordination	20	4	6				5-5
4. Strength	42	16	15				8-2
GROSS MOTOR COMPOSITE			*33 SUM	31	3	1	7-4
5. Upper-Limb Coordination	21	10	*4				5-11
FINE MOTOR SUBTESTS:							
6. Response Speed	17	2	6				4-5
7. Visual-Motor Control	24	15	10				6-11
8. Upper-Limb Speed and Dexterity	72	26	6				6-5
FINE MOTOR COMPOSITE			*26 SUM	32	4	2	5-
BATTERY COMPOSITE			*63 SUM	25	1	1	6-7

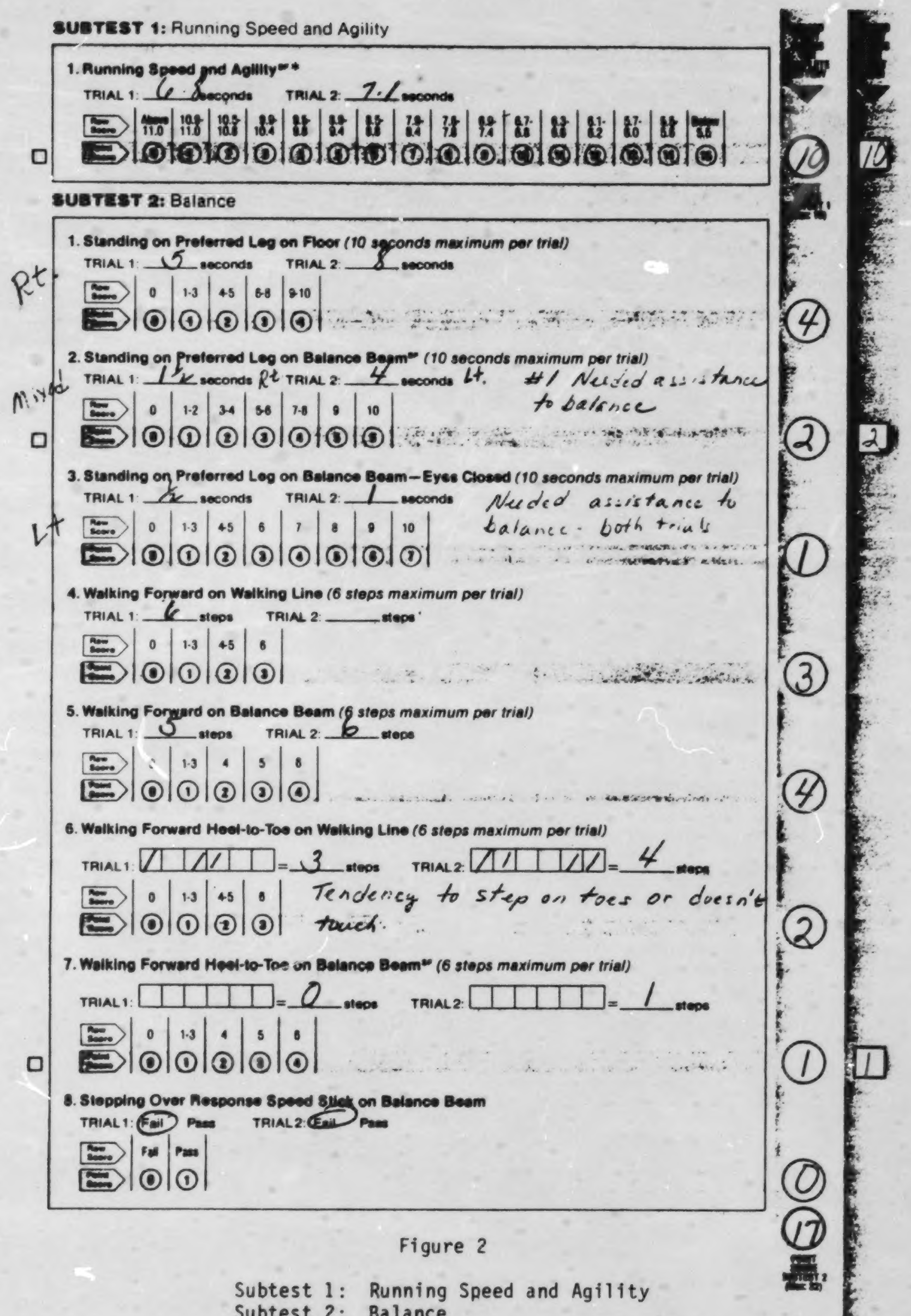
*To obtain Battery Composite. Add Gross Motor Composite, Subtest 5 Standard Score, and Fine Motor Composite. Check result by adding Standard Scores on Subtests 1-8

Short Form:

	POINT SCORE Maximum	POINT SCORE Subject's	STANDARD SCORE (Table 27)	PERCENTILE RANK (Table 27)	STANINE (Table 27)
SHORT FORM	98	35	33	5	2

Figure 1

Individual Record Form - Complete Battery and Short Form



SUBTEST 1: Running Speed and Agility

1. Running Speed and Agility

TRIAL 1: 6.8 seconds TRIAL 2: 7.1 seconds

☐

Raw Score	Above 11.0	10.9-11.0	10.5-10.8	9.9-10.4	9.5-9.8	8.9-9.4	8.5-8.8	7.9-8.4	7.5-7.8	6.9-7.4	6.7-6.8	6.3-6.6	6.1-6.2	5.7-6.0	5.5-5.6	Below 5.5
Point Score	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

10

10

SUBTEST 2: Balance

1. Standing on Preferred Leg on Floor *(10 seconds maximum per trial)*

Rt.

TRIAL 1: 5 seconds TRIAL 2: 8 seconds

Raw Score	0	1-3	4-5	6-8	9-10
Point Score	0	1	2	3	4

4

2. Standing on Preferred Leg on Balance Beam *(10 seconds maximum per trial)*

Mixed

TRIAL 1: 1½ seconds Rt TRIAL 2: 4 seconds Lt.

#1 Needed assistance to balance

☐

Raw Score	0	1-2	3-4	5-6	7-8	9	10
Point Score	0	1	2	3	4	5	6

2

2

3. Standing on Preferred Leg on Balance Beam—Eyes Closed *(10 seconds maximum per trial)*

Lt

TRIAL 1: ½ seconds TRIAL 2: 1 seconds

Needed assistance to balance - both trials

Raw Score	0	1-3	4-5	6	7	8	9	10
Point Score	0	1	2	3	4	5	6	7

1

4. Walking Forward on Walking Line *(6 steps maximum per trial)*

TRIAL 1: 6 steps TRIAL 2: _____ steps

Raw Score	0	1-3	4-5	6
Point Score	0	1	2	3

3

5. Walking Forward on Balance Beam *(6 steps maximum per trial)*

TRIAL 1: 5 steps TRIAL 2: 6 steps

Raw Score	0	1-3	4	5	6
Point Score	0	1	2	3	4

4

6. Walking Forward Heel-to-Toe on Walking Line *(6 steps maximum per trial)*

TRIAL 1: [/][ ][/][/][ ][ ] = 3 steps TRIAL 2: [/][/][ ][ ][/][/] = 4 steps

Raw Score	0	1-3	4-5	6
Point Score	0	1	2	3

Tendency to step on toes or doesn't touch.

2

7. Walking Forward Heel-to-Toe on Balance Beam *(6 steps maximum per trial)*

TRIAL 1: [ ][ ][ ][ ][ ][ ] = 0 steps TRIAL 2: [ ][ ][ ][ ][ ][ ] = 1 steps

☐

Raw Score	0	1-3	4	5	6
Point Score	0	1	2	3	4

1

1

8. Stepping Over Response Speed Stick on Balance Beam

TRIAL 1: [✓ Fail] Pass TRIAL 2: [✓ Fail] Pass

Raw Score	Fail	Pass
Point Score	0	1

0

17

Figure 2

Subtest 1: Running Speed and Agility
Subtest 2: Balance

SUBTEST 3: Bilateral Coordination

1. Tapping Feet Alternately While Making Circles with Fingers[M] *(90 seconds maximum)*

* Raw Score	[✓ Fail]	Pass	Loses circular pattern when tapping feet. Extraneous tongue and [illegible] movements
☐ Point Score	0	1	

Point score: 0 — 0

2. Tapping—Foot and Finger on Same Side Synchronized *(90 seconds maximum)*

* Raw Score	Fail	[✓ Pass]
Point Score	0	1

Point score: 1

3. Tapping—Foot and Finger on Opposite Side Synchronized *(90 seconds maximum)*

* Raw Score	[✓ Fail]	Pass	2 patterns max.
Point Score	0	1	

Point score: 0

4. Jumping in Place—Leg and Arm on Same Side Synchronized *(90 seconds maximum)*

* Raw Score	[✓ Fail]	Pass	Body rotation and some forward progress
Point Score	0	1	

Point score: 0

5. Jumping in Place—Leg and Arm on Opposite Side Synchronized *(90 seconds maximum)*

* Raw Score	[✓ Fail]	Pass	Not at all!
Point Score	0	1	

Point score: 0

6. Jumping Up and Clapping Hands[M]

TRIAL 1: 0 claps TRIAL 2: 1 claps

Raw Score	0	1	2	3	4	Above 4
☐ Point Score	0	1	2	3	4	5

Point score: 1 — 1

7. Jumping Up and Touching Heels with Hands

TRIAL 1: [✓ Fail] Pass TRIAL 2: [✓ Fail] Pass

Touches right heel only.

Raw Score	Fail	Pass
Point Score	0	1

Point score: 0

8. Drawing Lines and Crosses Simultaneously *(15 seconds)*

NUMBER OF PAIRS CORRECT: 3

Raw Score	0	1	2-3	4-5	6-7	8-9	10-11	12-14	15-17	Above 17
Point Score	0	1	2	3	4	5	6	7	8	9

Point score: 2

4

POINT SCORE SUBTEST 3 (Max: [illegible])

SUBTEST 4: Strength

1. Standing Broad Jump[M] *(record number from tape measure)* Trial 3- Fell backwards

TRIAL 1: 4 TRIAL 2: 5 TRIAL 3: 2

Raw Score	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
☐ Point Score	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Point score: 5 — 5

2. Sit-ups *(20 seconds)*

NUMBER: [illegible]

Raw Score	0	1-2	3-4	5-6	7-8	9-10	11-12	13-15	16-18	19-20	Above 20
Point Score	0	1	2	3	4	5	6	7	8	9	10

Point score: 5

3a. Knee Push-ups (For Boys Under Age 8 and All Girls) *(20 seconds)*

NUMBER: ______

Raw Score	0	1-2	3-5	6-7	8-9	–	–	10-12	–	–	13-15	–	16-18	–	–	19-20	Above 20
Point Score	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Point score: ○

3b. Full Push-ups (For Boys Age 8 and Older) *(20 seconds)*

NUMBER: 6

Raw Score	0	–	–	–	–	1-5	6-9	–	10-11	12-13	–	14-15	–	16-17	18-20	–	Above 20
Point Score	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Point score: 6

16

POINT SCORE SUBTEST 4 (Max: [illegible])

Figure 3

Subtest 3: Bilateral Coordination
Subtest 4: Strength

SUBTEST 5: Upper-Limb Coordination

1. Bouncing a Ball and Catching It with Both Hands *(5 trials)*

NUMBER OF CATCHES: 5

Raw Score	0	1-2	3-4	5	
Point Score	⓪	①	②	③	③

L

Rt **2. Bouncing a Ball and Catching It with Preferred Hand** *(5 trials)*

NUMBER OF CATCHES: 3

Raw Score	0	1-2	3-4	5	
Point Score	⓪	①	②	③	②

3. Catching a Tossed Ball with Both Hands[5F] *(5 trials)*

NUMBER OF CATCHES: 4 1 trap

☐	Raw Score	0	1-2	3-4	5		
	Point Score	⓪	①	②	③	②	2

Rt. **4. Catching a Tossed Ball with Preferred Hand** *(5 trials)*

NUMBER OF CATCHES: 0

Reaches with both hands

Raw Score	0	1-2	3-4	5	
Point Score	⓪	①	②	③	⓪

Rt. **5. Throwing a Ball at a Target with Preferred Hand**[5F] *(5 trials)*

☐☐☐/☐/☐ =HITS 2/5 – Throws too hard Looses accuracy

☐	Raw Score	0	1-2	3-4	5		
	Point Score	⓪	①	②	③	①	1

Rt. **6. Touching a Swinging Ball with Preferred Hand** *(5 trials)*

NUMBER OF HITS: 1

Raw Score	0	1-2	3-4	5	
Point Score	⓪	①	②	③	①

7. Touching Nose with Index Fingers—Eyes Closed *(90 seconds maximum)*

* Raw Score	[✓ Fail]	Pass	Flexes arm before the other is fully extended. ~~turns head~~ to meet finger
Point Score	⓪	①	⓪

Rt. **8. Touching Thumb to Fingertips—Eyes Closed** *(90 seconds maximum)*

* Raw Score	[✓ Fail]	Pass	Double touches and some finger tip misses
Point Score	⓪	①	⓪

9. Pivoting Thumb and Index Finger *(90 seconds maximum)*

* Raw Score	Fail	[✓ Pass]	5x
Point Score	⓪	①	①

⑩ POINT SCORE SUBTEST 5 (Max: 21)

SUBTEST 6: Response Speed

1. Response Speed[5F]

TRIAL	SECONDS TO WAIT	SCORE[1]		RANKED TRIAL SCORES[2]
Practice 1	1	XXXX		
Practice 2	3	XXXX		
1	2	0	HIGHEST	7
2	3	0		5
3	1	2		4
4	3	1	MEDIAN —	2
5	2	4		1
6	1	7		0
7	1	3	LOWEST	0

☐ → ② 2 POINT SCORE SUBTEST 6 (Max: 17)

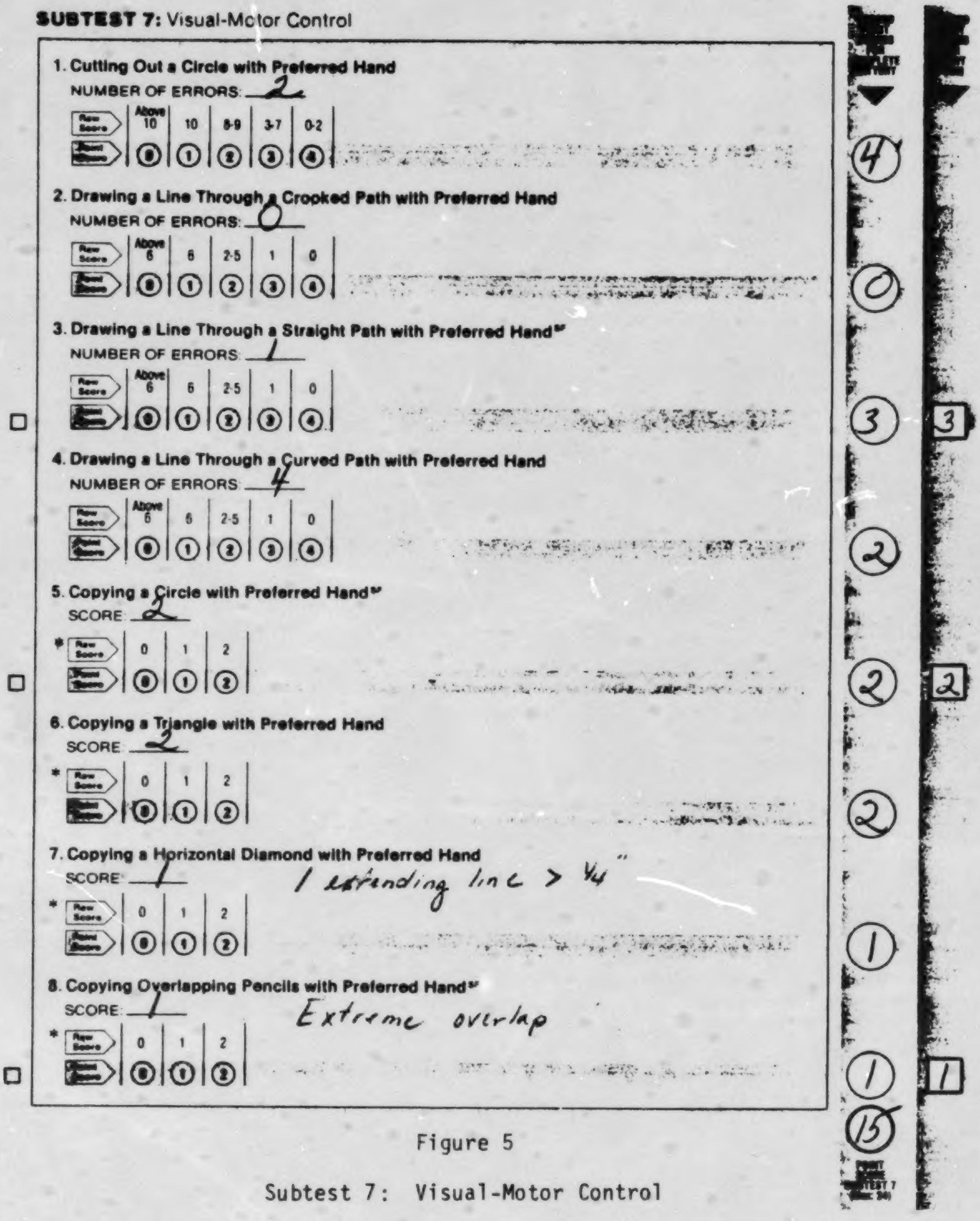
---

[1] Record number from response speed stick in this column.

[2] Rank all seven trial scores, highest to lowest, in boxes provided. The point score for Subtest 6 is the median (middle), or fourth, score from the top.

Figure 4

Subtest 5: Upper-Limb Coordinator Subtest 6: Response Speed



SUBTEST 7: Visual-Motor Control

1. Cutting Out a Circle with Preferred Hand
NUMBER OF ERRORS: 2

Raw Score	Above 10	10	8-9	3-7	0-2		
Point Score	0	1	2	3	4	4	

2. Drawing a Line Through a Crooked Path with Preferred Hand
NUMBER OF ERRORS: 0

Raw Score	Above 6	6	2-5	1	0		
Point Score	0	1	2	3	4	0	

3. Drawing a Line Through a Straight Path with Preferred Hand
NUMBER OF ERRORS: 1

Raw Score	Above 6	6	2-5	1	0		
☐ Point Score	0	1	2	3	4	3	3

4. Drawing a Line Through a Curved Path with Preferred Hand
NUMBER OF ERRORS: 4

Raw Score	Above 6	6	2-5	1	0		
Point Score	0	1	2	3	4	2	

5. Copying a Circle with Preferred Hand
SCORE: 2

* Raw Score	0	1	2		
☐ Point Score	0	1	2	2	2

6. Copying a Triangle with Preferred Hand
SCORE: 2

* Raw Score	0	1	2		
Point Score	0	1	2	2	

7. Copying a Horizontal Diamond with Preferred Hand
SCORE: 1 — 1 extending line > 1/4"

* Raw Score	0	1	2		
Point Score	0	1	2	1	

8. Copying Overlapping Pencils with Preferred Hand
SCORE: 1 — Extreme overlap

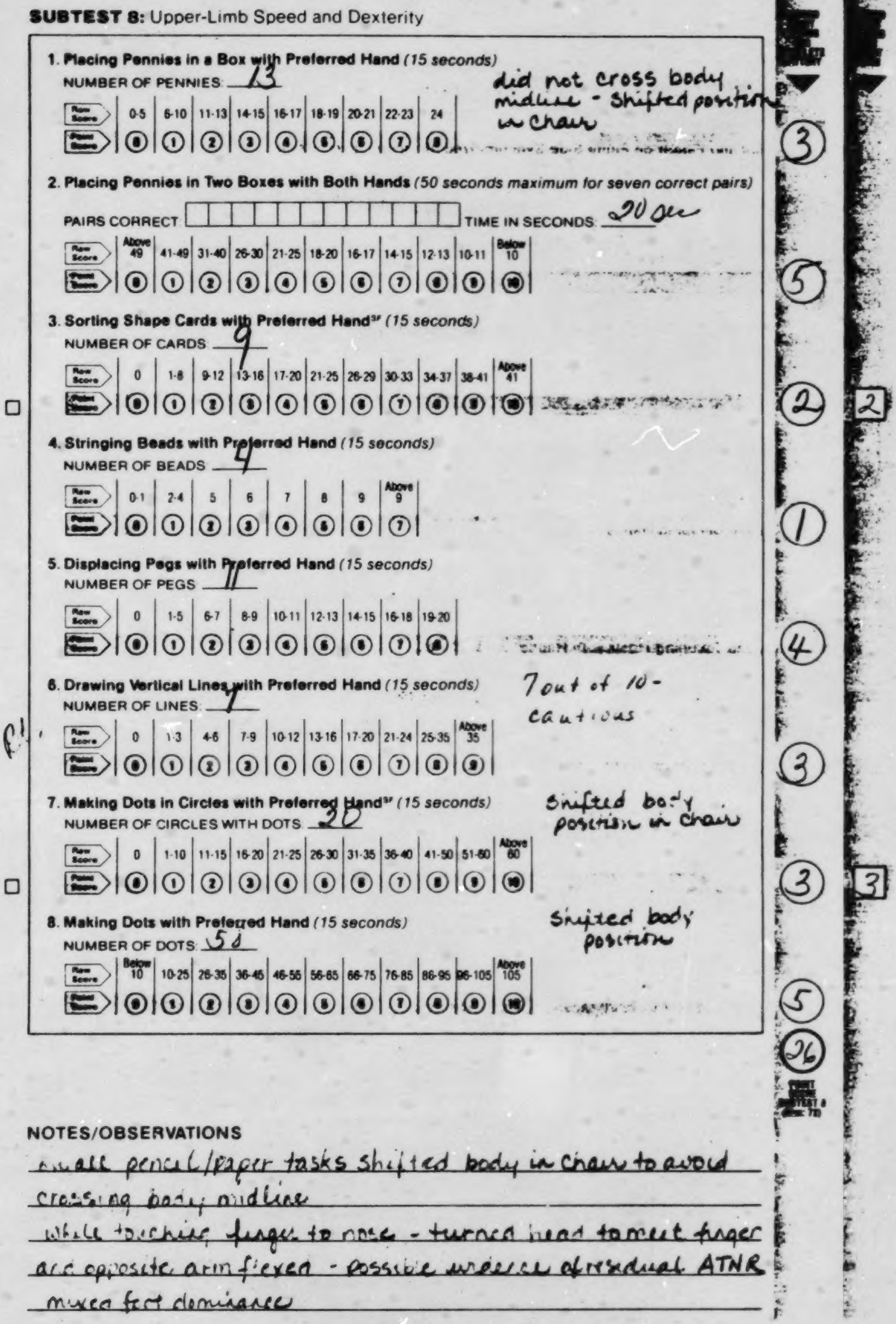
* Raw Score	0	1	2		
☐ Point Score	0	1	2	1	1

15

Figure 5

Subtest 7: Visual-Motor Control

Specialists in the area of sensory integration agree that bilateral integration (the integration of the sensory-motor function of the two body sides), motor planning and visual perception contribute significantly to a "fully integrated system." The B.O. subtests measuring fine motor performance especially lend to observations of these three constituents of sensory integration.



SUBTEST 8: Upper-Limb Speed and Dexterity

1. Placing Pennies in a Box with Preferred Hand *(15 seconds)*

NUMBER OF PENNIES: 13

did not cross body midline - Shifted position in chair

Raw Score	0-5	6-10	11-13	14-15	16-17	18-19	20-21	22-23	24
Point Score	0	1	2	3	4	5	6	7	8

3

2. Placing Pennies in Two Boxes with Both Hands *(50 seconds maximum for seven correct pairs)*

PAIRS CORRECT ☐☐☐☐☐☐☐☐☐☐☐☐ TIME IN SECONDS: 20 sec

Raw Score	Above 49	41-49	31-40	26-30	21-25	18-20	16-17	14-15	12-13	10-11	Below 10
Point Score	0	1	2	3	4	5	6	7	8	9	10

5

3. Sorting Shape Cards with Preferred Hand[3F] *(15 seconds)*

NUMBER OF CARDS: 9

Raw Score	0	1-8	9-12	13-16	17-20	21-25	26-29	30-33	34-37	38-41	Above 41
Point Score	0	1	2	3	4	5	6	7	8	9	10

☐ 2 ☐2

4. Stringing Beads with Preferred Hand *(15 seconds)*

NUMBER OF BEADS: 4

Raw Score	0-1	2-4	5	6	7	8	9	Above 9
Point Score	0	1	2	3	4	5	6	7

1

5. Displacing Pegs with Preferred Hand *(15 seconds)*

NUMBER OF PEGS: 11

Raw Score	0	1-5	6-7	8-9	10-11	12-13	14-15	16-18	19-20
Point Score	0	1	2	3	4	5	6	7	8

4

6. Drawing Vertical Lines with Preferred Hand *(15 seconds)*

NUMBER OF LINES: 7

7 out of 10 - cautious

Raw Score	0	1-3	4-6	7-9	10-12	13-16	17-20	21-24	25-35	Above 35
Point Score	0	1	2	3	4	5	6	7	8	9

3

7. Making Dots in Circles with Preferred Hand[3F] *(15 seconds)*

NUMBER OF CIRCLES WITH DOTS: 20

Shifted body position in chair

Raw Score	0	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-50	51-60	Above 60
Point Score	0	1	2	3	4	5	6	7	8	9	10

☐ 3 ☐3

8. Making Dots with Preferred Hand *(15 seconds)*

NUMBER OF DOTS: 50

Shifted body position

Raw Score	Below 10	10-25	26-35	36-45	46-55	56-65	66-75	76-85	86-95	96-105	Above 105
Point Score	0	1	2	3	4	5	6	7	8	9	10

5

26

NOTES/OBSERVATIONS

small pencil/paper tasks shifted body in chair to avoid

crossing body midline

while touching finger to nose - turned head to meet finger

and opposite arm flexed - possible presence of residual ATNR

mixed feet dominance

Figure 6

Subtest 8: Upper-Limb Speed and Dexterity

	Running Speed and Agility	Balance	Bilateral Coordination	Strength	Upper-Limb Coordination	Response Speed	Visual-Motor Control	Upper-Limb Speed and Dexterity
AAHPERD Youth Fitness Test	X			X				
AAHPERD Health Related Physical Fitness Test	X			X				
Physical Fitness Test for Calif.	X			X				
Special Fitness Test Manual for Mildly Retarded Persons	X			X				
Brigance Diagnostic Inventory of Early Development		X			X		X	
Denver Developmental Screening Test		X			X			
Ordinal Scales		X		X	X			
C.A.R.E.-L.A. County Schools Curriculum	X	X	X	X	X		X	X
Cratty's Six Category Gross Motor Test		X	somewhat		X			
Adapted Physical Education Assessment Scale (L.A. U.S.D.)	X	X	X	X	X			
Hughes Basic Gross Motor Assessment		X	somewhat		X			
Purdue Perceptual Motor Inventory		X	X	X			X	
Bender-Gestalt Test							X	
Southern Calif. Sensory Integration Test		X	X				X	
Developmental Test of Visual Motor Integration							X	
Basic Motor Ability Test	X	X		X		X		X

Figure 7

A Partial Listing of Assessment Devices with Similar Categories and/or Test Items as Contained in the subtests of the Bruininks-Oseretsky Test of Motor Proficiency

The Bilateral Coordination subtest of the B.O. well addresses that specific area, yet can be supplemented by observations made during the administration of the Visual-Motor Control and Upper-Limb Speed and Dexterity subtests (Figures 4 and 6). A deficit in bilateral integration may be noted during the task requiring simultaneous placement of pennies in two boxes. This provides information regarding one's ability to use the upper limbs together. Another example of a bilateral integration disorder may be observed during Item 8 of the Upper-Limb Coordination subtest, touching thumb to fingertips--eyes closed. Inability to use one hand without mirrored movement in the other may indicate an inability to isolate one body side for use.

While the B.O. does not specifically address crossing body midline or inconsistency in using right or left hand, such aspects of bilateral integration may be observed. Hesitancy to cross body midline may be observed during performance of the fine motor subtests, providing the examiner with yet another sign of insufficient integration of the two body sides. Hand preference may depend upon which side of the body the task occurs or the individual may alter his/her position in the chair by rotating or sitting on the outer edge during tasks to avoid moving the hand across the body midline.

Motor planning, the ability to plan and execute non-habitual motor tasks, is an integral part of much of the B.O. Due to the unique nature of many of the test items, it is crucial for the subject to have motor planning ability. The Response Speed and Bilateral Coordination subtests are as much a measure of motor planning ability as they are of the intended motor performance components.

While visual perception is not isolated as a subtest of the B.O., its influence can significantly alter an individual's performance on certain fine motor items. For example, an individual with visual perception problems may find it difficult to isolate the darkest line on which to cut the circle in the Visual-Motor Control subtest, contributing to a lower score than fine motor control alone would warrant. In extreme cases the penny placing mat may be visually confusing resulting in an inaccurate evaluation of the desired measure or observations of bilateral integration.

Although the B.O. does not evaluate isolated sensory systems (e.g., tactile, vestibular and kinesthetic) as does the SCSIT, it provides information regarding the integration of these systems which may suggest underlying factors for the individual's impaired motor performance. Therefore, this information contributes another dimension to the subject's complete motor profile.

In addition to being used by various professionals, complimenting several assessment measures and providing the examiner with information other than that originally intended by the author, the B.O.'s internal structure lends itself to variability. The examiner may wish to report the composite results in percentiles, stanines or age equivalents (Figure 1); each individual subtest may also be reported in age equivalents. As seen in Figure 1, the complete battery or the short form may be administered. It must be noted that while the short form involves less administration time, it does not provide the examiner with an individual's complete B.O. motor profile. If the short form is used as a screening device, one needs to understand the statistical structure of a stanine. The authors of this article have found that when the short form is scored from the entire battery results, there usually is a stanine difference of one, while there can be a stanine difference of two or more. These larger differences may be attributed to an individual's inability to perform balance and bilateral coordination related tasks. Therefore, when using the short form, it is important to note the methods and quality of performance, as these may suggest the need for further assessment.

"GUESS WHO'S COMING TO P.E."

SIX BASIC STEPS TO MORE EFFECTIVELY MAINSTREAMING THE HANDICAPPED

Darci Weakley

Nancy Linton

By law, more and more children with handicaps are being mainstreamed into regular physical education programs. Without proper training and information, it is no wonder physical educators feel frustration, resentment and inadequacy. The growing fear of not knowing how to meet the needs of these children is a reality. Time and time again, physical education teachers find themselves asking questions concerning their handicapped students which they do not feel prepared to answer.

Christy is a mentally handicapped youngster with cerebral palsy who constantly loses her balance and falls down in gym class. Her physical education teacher expresses concern, "Is there a way I can keep Christy active in my program when she is so limited in what she is able to do?"

Adama is a visually impaired child who is often teased by his classmates when out of frustration, he behaves immaturely. Adam's teacher asks, "How can I help the other children understand and become more sensitive to how Adam must feel?"

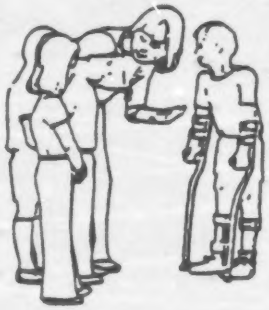
Jon is a learning disabled student who is very clumsy and awkward. His physical education teacher seeks advice, "How can I help Jon improve his skills and not become even further behind when I have 35 other students in the class with use of only one side of the gym? Jon must feel like a failure in my class - what can I do?"

Physical education teachers, by the very nature of their program, are constantly reminded that teaching children with handicaps in the mainstreamed program can be frustrating and disappointing. The time has come to meet the challenge. We must invite change. The following teaching strategies by no means cover the spectrum of problems arising out of mainstreaming nor do they fit every physical educator's teaching style. Hopefully, the reader will find some insight, new hope and assurance when designing a healthy learning environment for children with special needs.

PREPARE AN ENVIRONMENT IN WHICH INDIVIDUAL DIFFERENCES ARE RESPECTED AND VALUED

- Do not ignore differences: prejudices, misunderstandings and even fear will prevail. Young children need to know, for example, their classmate with epilepsy will not die from it and that it is not contagious. Describe to your class what a seizure is and what it looks like. Let them know that it is embarrassing for their friend if they stand around and stare rather than to continue with their activity.

- Confront differences by encouraging students to ask questions. Answer their questions directly and in behaviorally stated terms.



"Jimmy's legs do not work well because there was an injury when he was born."

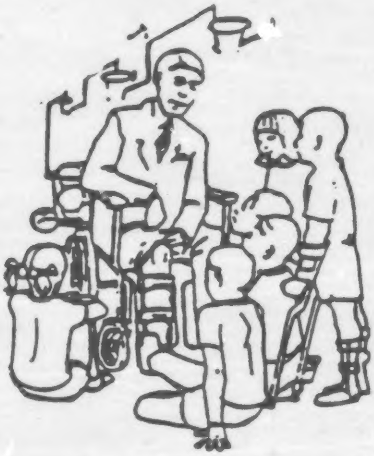
- When you feel it is necessary to talk with your class about a child who is handicapped, you may decide to do so before the child is mainstreamed or when the child is present. It is usually wise to seek the advice of the classroom teacher, nurse, school social worker or even parent to determine exactly what should be said to your class and when it should be said.

- Stimulate handicapping conditions by having students role play to promote a better understanding of what their handicapped peers experience. Have students learn a new game from a wheelchair, wearing blindfolds or ear plugs or with vasoline smeared on their glasses. To understand the perceptual-motor problems experienced by some learning disabled choldren, have your class practice or play with the nondominant hand or foot or with one eye covered. Encourage the students to talk about the difficulties they experienced or how they felt.

- Discuss with younger children the handicaps depicted by storybook characters such as Beauty and the Beast or Tom Thumb. Have the children react. "If you were Tom Thumb, how would you want people to treat you?"

- Discuss why people mock others. Teasing others can be explained in terms of how people sometimes handle anxiety. "We don't know what to do around someone who is different so we laugh at them because we are nervous." It is important not to threaten students who tease. Telling a child you will make them leave the class if they tease does not deal with the problem. It is far more important to help the youngster understand why the handicapped child is the way he is and that he is more alike than different from other children.

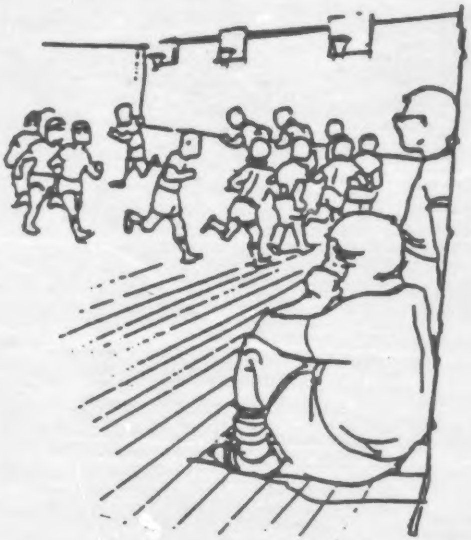
- Invite a handicapped adult to come and talk to your class.



ELIMINATE ESTABLISHED PRACTICES WHICH UNWITTENLY CONTRIBUTE TO EMBARRASSMENT AND FAILURE

- Avoid students selecting their own teams in front of the class, a situation in which the seemingly unattractive, less accepted childre are invariably chosen last.

- Avoid elimination games where unskilled children are frequently sidelined. These same children need the most practice.



I'm a loser!

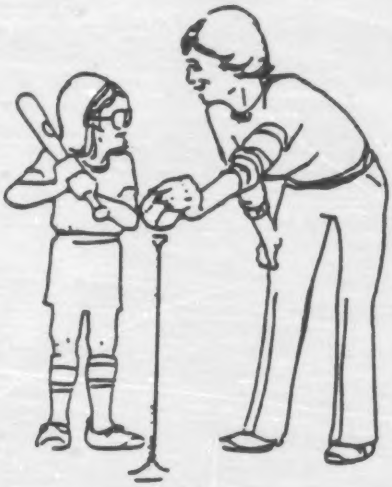
- Do not post the best fitness scores. These are the same select names year after year. Post the most improved scores so that even the handicapped child see opportunities for "bulletin board" success. Don't worry, our super ego athletes will survive!

- Be flexible by not requiring students to perform all the same activities. For example, the obese child is humilated by the 600 yard run. Allow him to jog in place with rest intervals to build his cardiovascular endurance while his classmates run. Apply the overload principle by each day increasing his jogging time, decreasing the rest periods.

BUILD EGO STRENGTH

- It is important to help the child with special needs to feel good about himself within the realistic framework of his own abilities.

"No, Susan, you won't hit a home run, but you have reached first base using a batting tee. Remember you couldn't do that last year!"



- Help the handicapped child build self-acceptance. This comes from a sense of personal effectiveness for the child, "I am capable, I am lovable." Encourage the child to make a full effort at each task and then say, "I am doing the best I can!"

- Teach the child not to fear mistakes but to see them as an opportunity to learn. We all need the courage to try, to be imperfect and to move ahead.

- Help the child see and believe in his or her strengths. Sit down and assist the child in making a list of personal traits as well as a list of abilities in the physical education class.

My Personal Traits

- I am trustworthy.
- People can count on me.
- I like people.
- I value my ability to learn.
- I know people who love me and really care about me.

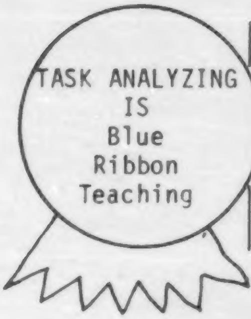
Me and Physical Education

- I am a good squad leader.
- I am improved on the shuttle run.
- I always listen to directions.
- I am courteous in the locker room.
- I learned to forward roll.
- I always try my best.

- Provide successful experiences. The handicapped child can find success if we teach from the child's present level of performance to insure activities are within reach and successful experiences are maximized.

TASK ANALYZE

Find out, for example, where a child who cannot skip performs in the hierarchy of tasks.



TO SKIP:

____ Balances on preferred (non-preferred) foot
____ Hops on preferred (non-preferred) foot
____ Steps and hops on preferred (non-preferred foot
____ Peforms rudimentary skip
____ Skips with smooth continuous rhythm

Teach from the Child's Strengths

- Set realistic expectations. What children with handicaps need most is to simply be understood and accepted as they are without expectations which are more or less than that which they are capable.

- Allow children to participate at a level that corresponds to each child's maturity and ability.

> Tim, age 11, states, "I got 6th place again in the 220." "How fast did you run?" asked the adult. "As fast as I could!" the child replied.

- Use positive reinforcement.

A smile, a wink and a friendly word go for miles.

PROVIDE INDIVIDUAL ASSISTANCE AND KEEP CHILDREN ACTIVE

- Employ the buddy system and peer tutoring.

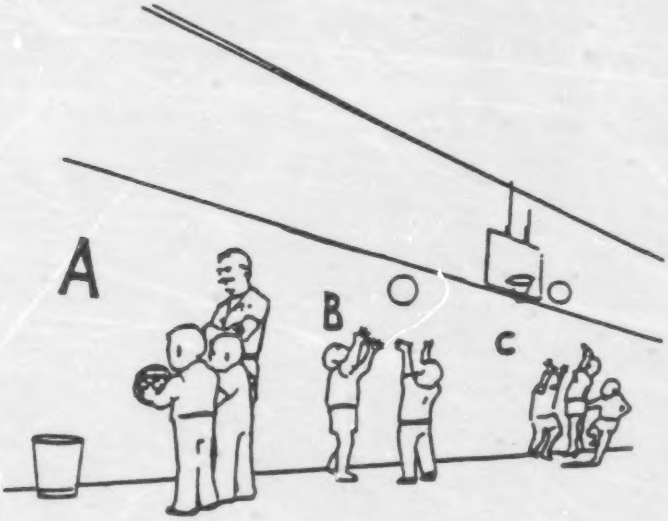
  Assign the handicapped child to reliable students on a rotating basis. The visually impaired or cerebral palsy child is helped by his "buddy" during class. When activities become too difficult, the child can be tutored by his buddy at the side with appropriate exercise and skills.

- Provide supplementary services when possible.

  Primary aged children need basic motor skills presented on a developmental, sequential, problem solving manner. Older children can benefit from pre-teaching sport skills to familiarize them with the skills and knowledge required of them in their physical education class.

- Use fitness and motor ability teaching stations.

  Students can be assigned different stations which are individually designed for varying skill levels.



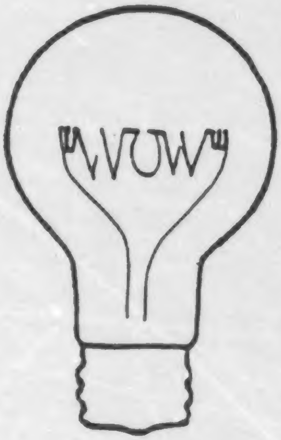
- Use all balls and equipment.

  Avoid inactivity during drills and practice. The more opportunities a child has to participate, the more he or she will improve. What an exciting experience to see a P.E. teacher setting up six softball stations to accommodate a class of 35 kids. And what a contrast to watch a junior high speed-away class using a barrel full of balls for drills as compared to another class who, in squads of six students, face each other to practice a drill with one ball!

ABILITY GROUP TO ALLOW FOR MASTERY TEACHING

- It is essential to provide time for the handicapped child and others with similar abilities to successfully perform a skill before moving on to the next in the hierarchy. This is called Mastery Teaching. Instruct your class followed by ability grouping. The more able students are allowed to participate in advanced drills or even begin the actual game while less able students practice and improve skills at their own pace.

IDEA!



Make smaller, narrower courts and other play areas. This allows room for skill practice along the walls. Why not try two or even three badminton nets lengthwise on one half of the gym instead of one volleyball net?

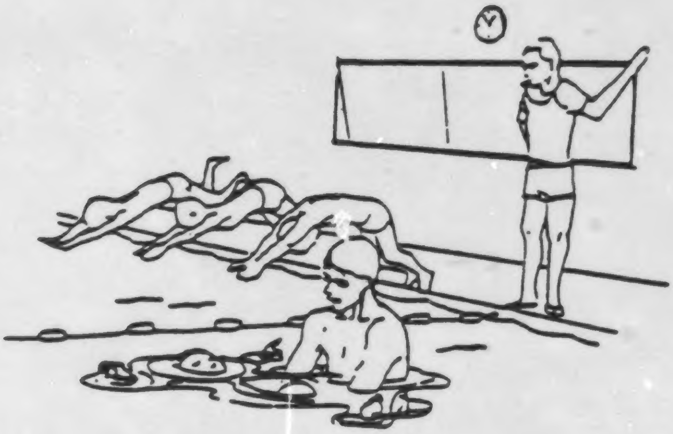
FOOD FOR THOUGHT:

The beginner swimmer is not placed on the swim team because he has learned to float. Why then are children herded along in physical education class and expected to play volleyball, for example, when they are still unable to serve or volley?

Swimmers take your mark.

Get set

FLOAT!



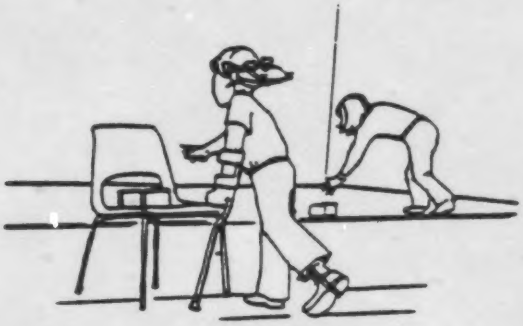
Provide for Mastery Teaching

BE A MASTERY TEACHER!

ALTER AND ADAPT

- Modify the rules and equipment.

  If an atmosphere of respect for individual differences has been established, students will accept the need for modification for their handicapped peers.



  - Shuttle Run - blocks placed on a chair
  - Temporarily shortened first base
  - Midcourt serves
  - Catching and throwing the volleyball rather than using the overhead volley
  - Use of batting tee, large plastic bats
  - Three foul shots
  - Traveling

- Encourage the handicapped child and classmates to discuss the best and most fair way in which to alter activities and equipment.

Giving the complexity of mainstreaming children with handicapping conditions into the regular physical education program, it is realized that not all problems have solutions. This has been an attempt to explore possible ways to overcome obstacles which include:

1. Helping students become more accepting of their handicapped peers.
2. Assisting the handicapped child in building self-acceptance and greater confidence.
3. Incorporating teaching ideas which will aid in meeting the individual needs of the handicapped child.

RECREATION AND LEISURE FOR THE EXCEPTIONAL INDIVIDUAL: TOWARD GREATER INVOLVEMENT AND PARTICIPATION

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Over the past thrity years our conception of the role of professionals in providing recreation and leisure services for exceptional individuals has changed. We have started to move away from a paternalistic attitude of activity provision in which "we," as professionals, provide service and "they" as clients, patients, students, etc., receive service. Our "modern" service system gives much more credance to participant input and places a part of the burden of successful participation on the participants themselves. Thus, we have moved to a greater degree of cooperation, joint action and mutuality with those we serve. We have recognized the possibility for professionalism without professional domination.

On another front, there has been a growing recognition of the need for joint and cooperative action among professionals from different disciplines who seek to work with exceptional individuals. While it has been traditional to divide the client up like a butcher store beef chart with each professional being responsible for working with a different segment, we are beginning to see the necessity for a comprehensive service system that encompasses the joint input of all disciplines to serve the needs of a given client.

There has also been progress toward creating an integrated conceptualization of what types of services need to be offered to maximize the recreation and leisure functioning of clients. In essence, this conceptualization envisions three types of services:

1) Services aimed at providing opportunities for recreation participation.
2) Services aimed at dealing with skill or behavior deficits that impede leisure or recreation functioning.
3) Services aimed at improving the person's self-preception, attitudes, values, decision-making abilities and knowledge with respect to recreation and leisure participation.

We now recognize the joint necessity of dealing with all these areas in order to create an integrated approach to servicing the total needs of exceptional individuals. We now speak in terms of service systems rather than just a given program, class or event.

Another area in which involvement and cooperation are being achieved is in the area of integration. We now recognize the value of integrated opportunities. Public Law 94-142, although it has its attached paperwork, etc., has forcefully brought home the notion that every citizen has the right to progress to the "least restrictive environments" possible for a given activity or program. We have also recognized the need for making opportunities less restrictive in terms of the risks that can be taken and the activities that are sponsored. We have done much to combat public attitudes, overcome transportation problems and remove artchitectural barriers all of which have acted as serious impediments to the involvement of exceptional participants in a full range of recreation and leisure opportunities. We have removed many barriers to integration recognizing the advantage of "normal" involvement vs. over-protection, exclusion and indeed discrimination. We have come to understand that segregation leads to more segregation and integration to more integration.

There are still, of course, challenges and problems in our attempts to conceptualize, develop and provide needed services. First, although progress has been made in developing cooperative efforts among various disciplines, the team approach is not without its claims of territory and special expertise. In one sense there has been a tendency to over-specialize and fragment our efforts. Too often we deal with the client as if he were a ping-pong ball to be bounced back and forth between professional disciplines. Certification and standards serve a purpose but they have to do more with provider needs for status than client needs for service.

A second problem area involves our conceptualization of the purpose of our interventions or more precisely the nature of recreation and leisure itself. For too long we've treated recreation and leisure as simply activities and measured success in terms of participation. Recent evidence suggests, however, that it is not what the individuals do, but how they feel about what they do that is important. Thus, it is critical that we think in terms of experiences not activities. Experiences to be maximally effective should emphasize a perception of personal control, competence, intrinsic motivation, thus opening up opportunities for playfulness and depth of involvement. We also need to open up our perception of the range of acceptable involvements to include cultural, craft, hobby, social as well as physical activities. While fitness and coordination are beneficial, people have a variety of interests, or to put it another way, people achieve some of the above feelings of control, competence and intrinsic motivation through a variety of pathways.

A third area of concern is our failure to sell the importance of what we do to those in the other disciplines, those who make budget decisions and the public at large. We blame "they" for not understanding our mission and role when, at times,"we" don't explain ourselves very well. Too often we don't document our impact, do the necessary evaluation and field research necessary to show the effect of our services, or clearly demonstrate the need for our intervention in the first place. In an age of government cutbacks, it will be increasingly necessary to get the message to those who make decisions and develop the type of information that will make our message effective.

In total, the 80s and beyond will be an exciting period of developing a system of recreation and leisure services for exceptional individuals based on a clearer understanding of our mission and potential impact. It is also a time for "involvement and participation" of the client as consumer and the professional as advocate, leader, enabler, educator, teacher and programmer. The challenge of providing a meaningful service system is the true test of our professional commitment.

PROGRAMMING AND PROVIDING LEADERSHIP IN RECREATION SITUATIONS FOR EXCEPTIONAL INDIVIDUALS

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In this presentation, goals for providing recreation and leisure services for exceptional individuals are discussed. Based on attribution theory and the leisure as a state of mind perspective, specific recommendations are made for increasing an individual's perception of competence, control and intrinsic motivation. Increasing self-perceptions in these areas should facilitate improved leisure functioning. Specific strategies to be discussed are indicated in the following table.

SUMMARY OF THE PRINCIPLES AND GUIDELINES FOR IMPROVING LEISURE FUNCTIONING

STEP 1: Provide an Environment Conducive to Remedial Efforts

A. Individualize program content
B. Design communications for positive effect on beliefs
C. Fulfill ongoing role as an advocate

STEP 2: Create an "Involvement Environment"

A. Plan a means for attracting attention
B. Arrange complexity for optimal challenge to the client
C. Ensure that the stimulus field is narrow; eliminate environmental distractors
D. Ensure that extrinsic rewards are not the most prominent source of motivation for involvement
E. Where possible, arrange experience so that feedback is immediate
F. Ensure that the individual's awareness of the consequences of winning and losing are minimized

STEP 3: Initiate Participation in a Manner Facilitative of Leisure

A. Gain the trust of the reluctant participant and gradually expose him to the activity
B. Provide the individual with opportunities to choose "between activities"
C. Provide the individual with opportunities to choose "within activities"

STEP 4: Design Your Interactions with the Client During the Activity Such that Leisure is Facilitated

A. Emphasize choices "during" the activity
B. Include a message in verbal reinforcement
C. Emphasize self evaluation and deemphasize evaluation by others
D. Deal with failure in a manner facilitative of leisure

STEP 5: Conduct an Ongoing Assessment of Client Freedom

A. Look for clues of an increased sense of freedom
B. Beware of unintentioned bias in looking for evidence of improvement
C. Communicate progress and expectations with the client

THE FORCE OF PLAY

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Play is dynamic activity. It involves the human interacting with something that presents a challenge while at the same time contributing to emotional, social, physical and intellectual growth. Play is where life is lived, according to George Sheehan, a noted cardiologist and philosophical guru of running. He points out that if play becomes structured, "we lose the good life and the good things that play provides." In his book Running and Being, Dr. Sheehan labels the "good things" as:

> "Physical grace, psychological ease and person integrity. Some of the best are the peak experiences, when you have a sense of oneness with yourself and nature. These are truly times of peace the world cannot give. It may be that the hereafter may have them in constant supply. I hope so. But while we are in the here and now, play is the place to find them. The place where we are constantly being and becoming ourselves."

In play there is a dynamic force that can enrapture the child and adult alike. In this essay, I will look at some developmental aspects of play. Some questions that look at those aspects are: How does play contribute to self-esteem? How is this dynamic force linked to intelligence and socialization? And, furthermore, what challenges exist in play that enrapture the child from birth onward?

Historically, play is as old as mankind. It is something that people have enjoyed from earliest time. The forms of play vary, as much as society's attitude toward play varies. In his essay, G. P. Stone expresses this societal attitude of play in the following words:

> "Play, like other collective enterprises, is a collective representation: it represents the arrangements of the society and historical era in which it is carried on."

For Americans, the early part of this century was consumed with industrialization, mass production and the restoring of world peace. People still played, but the attitude that prevailed was that work came first and anything left over could be devoted to play. The only exception to this was play with children. But even play with children became product-minded. As Americans, we became time conscious and didn't want children to play too long. Evidence of this notion is expressed in the cliche, "All you ever want to do is play," uttered by many parents. Today, play is recognized as an integral part of the collective enterprise of living. For adult, many employers are seeking ways of blending work and play for their employees. Play for the adult is taking on a renewed awareness. For children, play continues as an adventure into the unknown and the arena where they practice the lessons that prepare them for the adulthood years. A major difference in child's play is that developmental psychologists have identified valuable components in play that promote a child's physical, emotional, social and intellectual growth. This new perspective of play causes us to look at how children use their bodies and minds simultaneously. In his book, The Power of Play, Frank Caplan states:

> "Children use their bodies when they follow their natural impulses to run and shout, skip and hop, jump and climb, and so on. The more a child uses all his muscles, the greater will be his physical and emotional release and his growth and enjoyment of life."

Play provides children a chance to lay plans and to judge what is best in situations where they control the sequence of events. Caplan further blends the learning to do things and the acting out of fantasy's in the following statement:

> "In play there are two forms of the will to power, that which consists of learning to do things and that which comprises fantasy. Every normal child like to pretend to be a giant, a lion or a train. In his make believe, he inspires terror and gains a sense of power. His pretending does not keep the child's play from proceeding with the utmost seriousness. The contrast between his make believe and earnestness is so fluid that a child considers play a real life experience."

Another form of body, mind construct and how simultaneously they interact, is in the self-concept, how the child sees and accepts his/her body. The sequence of motor behavior such as: sucking, tasting, seeing, moving the head, grasping at objects, crawling and walking are all prerequisites to gaining mastery of a physical sense of self. On the subject of self-esteem, Caplan presents the idea that a child:

> "Has to have an acceptable image of his own body so he can feel at ease in his own skin. His good control of his body is one important way he can feel good about himself and about life. The more adept he becomes at controlling his body, the more a child feels a full and satisfying sense of his autonomy."

The dynamic force driving play is the reward of feeling oneness with the universe.

As the child gains a physical sense of self, he/she also engages in experiences that contribute to furthering his/her intellectual and social growth. Jean Piaget, a renowned child psychologist, based his theory of intelligence on the dynamic force of reciprocal sensory motor experiences the infant engages in. He states that:

> "The infant moves from being a "reflexice organism" that responds in an undifferentiated way to his environment. To a 'relatively coherent organization of sensorimotor actions' to master and affect his immediate environment. He uses external stimulation -- parents and play -- and his inherent reflexes in an unreflective manner. An infant's movements lack precision. His activities, like his attention, are dominated by external stimuli."

An example of this external stimuli is demonstrated in the game of "peek-a-boo." This little game, played by infants all over the world, characterizes the reciprocal sensory motor exchange that requires the child to incorporate distances, depth and the social dimension of cooperation through turn taking. According to Piaget, sensory motor play serves as the foundation of intellectual development. It is in this sensory motor period that the child begins to incorporate the friendliness of the social environment. Margaret Mead expresses this reciprocal interaction as the "best first thing the newborn can have." In Dr. Mead's book on families, she discusses the mother-infant relationship when she stated:

> "During the long months of infancy while the child's tie to the mother is a bodily one, the child learns through his own body what the world is like and what it is to be a person. As the mother feeds the child when he is hungry, the child learns that the world can be trusted to provide the things he needs. As the mother senses her child's sleepiness and lulls him to sleep, the child learns to fit together feeling and action.... As the mother smiles when her child smiles..... and clucks in response to his first playful babbling, the child learns that the world is a place in which people can reciprocate mood and meaning."

The reciprocation of mood and meaning parallels a fine tuned symphony and a dancer responding to stimuli with mood and meaning. Imbedded in the dimensions of play are challenges that serve as motivation for physical, emotional, social and intellectual growth. Play brings together experiences that are actively being rehearsed. In his essay on play, Stram points out that:

> "Through play, more than anything else, the child achieves mastery of the external world. He learns how to manipulate its objects as he builds with blocks, makes sand castles, etc.. He also begins to master social relations as he learns that he must adjust himself to others if group play is to continue."

Play as a universal phenomenon has challenged humankind to venture forth in the environment. The dynamic force of play is a person's most useful preoccupation. It is the source of where life is lived and people renew themselves. Play begins with the infant and proceeds to build social, emotional, physical and intellectual experiences that provide the "good life and the good things." Caplan presents the renewal quality of play in the following:

> "Man as an artist is indefinitely more ancient than man as worker. Man has made his greatest progress when not grubbing for necessities, when nature was so bountiful that he had the leisure to play and the inclination to tinker. It is the child in man that is the source of his creativeness."

It is this source of creativeness that contributes to the dynamic force within play. George Sheehan captures bodily transformation in play when he says:

> "It will not surprise you that the thinkers believe that our journey is back to our childhood. One mystic wrote that man's perfection and bless lay in the transformation of the bodily life to joyful play."

Satre also places play as a high achievement of living when he states: "Man highest expression of freedom is play."

RESEARCH SECTION

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THE EFFICACY OF A PREPRIMARY MOTOR AND PLAY SKILLS PROGRAM FOR SEVERELY MENTALLY RETARDED AND PRESCHOOL TRAINABLE CHILDREN

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Introduction

A review of the motor development literature reveals that the development of appropriate play skills is very important in relation to the gross motor skill acquisition of normal children (McClenaghan & Gallahue, 1978). More recent research on handicapped children suggests that the absence and/or inability to play may further retard their gross motor development (Wessel, 1980). These findings suggest that the naturally occuring complimentary association between play and gross motor development in normal children should be incorporated into the physical education programs for preschool and elementary level handicapped children.

The Marvin Beekman Training Center which is located in Lansing, Michigan provides a full range of services from preschool through vocational training for approximately 240 trainable mentally retarded, severely mentally retarded and multiple handicapped student up to the age of 26. Instruction in physical education is a high priority for all students at Beekman Center and not just an added frill. The physical education facilities include two gymnasiums, pool and extensive outdoor activity areas. All students in the center receive physical education services designed to address their unique needs. This objective based physical education curriculum has been computerized to assist in record keeping, monitoring student performance and, eventually, for developing normative performance standards.

Purpose

Although the present physical education curriculum is extremely innovative and progressive, it was not initially designed to accommodate the large number of preschool trainable and severely mentally retarded children that are now being referred to the center for services. The inadequacies of the present curriculum result in many low level students remaining at the beginning level of several of the fundamental skill sequences for two or more years. In light of the need to expand the lower end of the physical education curriculum and the desire to include a greater emphasis on the development of play skills, this project was designed to develop a preprimary motor and play skills program. The primary objectives for this program were: 1) to further delineate the basic performance objectives in the fundamental skills sequences to accommodate the younger and lower functioning children; 2) to develop written objectives for selected body control and play participation skills; and 3) to create a play oriented environment structured for maximum movement and interaction to enhance the learning of the targeted performance objectives.

Procedures

Three groups of ten students were selected to participate in this pilot program. Each group was chosen according to age, IQ, and general level of functioning in their present physical education program. The following table contains descriptive data on each group.

Level	Age Range	IQ Range	No. Males	No. Females
A. Preschool trainable (high functioning learners)	3-6	30-50	5	5
B. Severely Retarded (Intermediate functioning learners)	11-16	30 and below	3	7
C. Severely Retarded (Low functioning learners)	4-10	30 and below	7	3
TOTALS			15	15

The objectives included in this new program were designed to support the same general goal areas contained in the existing physical education curriculum. The specific objectives chosen were selected with a purpose of: 1) providing exposure to appropriate play participation skills; 2) providing variety in programming by the inclusion of several different goal areas; and 3) serving the needs of the selected students based on their past instruction and resulting assessed performance. Ten target objectives were selected to serve as the content for the pilot testing of the program. The objectives selected were:

1. to jump down
2. to bounce a ball
3. to catch a ball
4. to kick a ball
5. to roll a ball
6. to walk/run for endurance
7. to climb down a ladder
8. to pull an object
9. to ride a tricycle
10. to participate in a free play setting

All the students were assessed on the ten target objectives using the procedures described in the I CAN Preprimary Motor and Play Skills units (Wessel, 1980). The I CAN program materials were also used as a reference for instructional activities and games for the play periods. The students are now being taught according to their assessed needs on each of the target objectives. During the school year, all three of the groups will receive instruction in 40 minute periods twice a week in this ongoing program. Instruction is provided by and supervised by an adapted physical education teacher and two aides resulting in an approximate staff-student ratio of 1:3.

Conclusions

The design and purpose of this pilot program has been to develop basic play participation skills related to subsequent motor skill acquisition through curriculum development. The effectiveness of the program will be evaluated and presented in November of 1982, delineating the preliminary findings regarding assessment procedures and initial rate of achievement. Any needed modifications in content and procedures will also be reported.

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ASSESSMENT OF DEAF CHILDREN FOR PHYSICAL EDUCATION

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In a previous study, Brunt and Broadhead (1982) reported the motor proficiency traits of severely and profoundly deaf children on each of the eight sub-tests of the fourteen item Bruininks-Oseretsky Test of Motor Proficiency--Short Form. This study was undertaken at the Louisiana State School for the Deaf and, based on normative data, subjects were placed in stanine groups. It was subsequently decided that those children in stanine 1 (S1) should receive adapted physical education. Those children in S2 or S3 would not totally require a specially designed program and hopefully the remainder of the children would best be suited to regular physical education.

State schools for the deaf are separate educational settings and children do not receive regular physical education per se. It is therefore a within school administrative duty to homogeneously group their students. As the Bruininks-Oseretsky Test was standardized with nonhandicapped children, the authors were concerned as to the sensitivity of this test in accurately detecting motor proficiency levels of deaf children. These concerns partially arose because of extreme performances by the deaf children on certain test items (Brunt & Broadhead, 1982). This presentation will address statistical utilization of motor proficiency data with the aim of providing more objective placement decisions.

Procedures

Subjects were attending the Louisiana State School for the Deaf, Baton Rouge. Approximately 98% of the children had a hearing loss $>$ 60dB and no subject displayed physical or cognitive impairment that could affect motor proficiency performance. From the results of the fourteen item Bruininks-Oseretsky Test--Short Form (Brunt & Broadhead, 1982), children were grouped, 16 per group, in either S1, S2-3, or S4.

This data was then subjected to discriminant analysis. This assessed the differences among the three groups by calculating the discriminating power of each test item and forming two linear functions of these variables. The previous placement decisions were then inspected and, where necessary, subjects were reclassified into either S1, S2-3, or S4. This new classification was based on subjects' scores on those items deemed by the analysis to maximally differentiate between group performance.

Results and Discussion

A step-wise selection procedure employed only nine of the original fourteen items to maximally differentiate group performance. On these items, the performance means were significantly different between S1 and S2-3, $F(9,37) = 2.80$, $p < .01$, and between S1 and S4, $F(9,37) = 4.82$, $p < .001$. No differences existed between S2-3 and S4 ($p > .05$). This initial result supports the use of only nine of fourteen items in detecting appropriate group differences. However, these differences only upheld with respect to the first function, $x^2 = 44.75$, $p < .001$ which accounted for 76.75% of the variance.

Discriminant analysis then reclassified children according to their results on the selected nine items. This information is shown in Table 1.

Table 1

Initial and Present Subject Classification

Initial Group	N	Present Group Membership		
		S1	S2-3	S4
S1	16	12	4	0
		75.0%	25.0%	0.0%
S2-3	16	2	11	3
		12.5%	68.8%	18.8%
S4	16	1	4	11
		6.3%	25.0%	68.8%

An overall correct classification of 70.83 percent was obtained with misclassification having occurred in all three goupings.

This analysis has indicated that a reduction in test items does provide increase power in differentiating group performance over the ability levels S1 to S4. The use of statistical techniques, such as the one employed in this paper, provides a more honest and realistic approach to placing children in special physical education programs. To the authors, this is a very important decision, one that must not be overlooked.

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NEUROLOGICAL ORGANIZATION AND DEVELOPMENTAL PATTERNING: SEQUENTIAL PROGRAM IMPLICATIONS FOR THE SEVERELY HANDICAPPED--PART I

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Adapted physical educators are faced with a tremendous challenge to provide services for severely handicapped individuals. With emphasis on appropriate programming for children with multiple handicapping conditions, it is necessary to have an understanding of neuroanatomy and basic CNS functioning. Over 50% of congenital defects and malformations found in humans involve the nervous system. Normal individuals can respond to afferent stimuli. With severely handicapped individuals the sensory response is "short circuited" into a few abnormal sensorimotor patterns of movement. Researchers have demonstrated that proper neurodevelopmental patterning and sensory stimulation does effect positive change in severely handicapped individuals with CNS dysfunction. The purpose of this paper is to provide a theoretical overview of neurodevelopmental approaches for appropriate sensory stimulus and methods for counteraction of abnormal postural reflexes and patterns of incoordination which interfere with attaining normal motor activity. The basic concept of motor learning and skill development is easily understood when referring to locomotion, receipt and propulsion, visual motor control and balance. However, the physical educator must adapt and apply these basic principles to positioning, handling, and activity analyses appropriate for severely handicapped individuals.

Adapted physical educators are faced with a tremendous challenge to provide services for severely handicapped individuals. Traditional teaching methods, assessment instruments and motor activities are simply not appropriate. Yet severely handicapped individuals need sensory stimulation and physical training! "Small wonder, then, that we are so easily cowed by a therapist who authoritatively points to Fiorentino's table of normal sequential development and states: "Physical educators can only work with persons whose movements are under cortical control; therapists are the ones who work with children functioning at the midbrain level of CNS maturation or lower'."

Teachers must begin to have an understanding of neuroanatomy and basic CNS functioning. Over 50% of congenital defects and malformations found in humans involve the nervous system (Brown, 1980). From birth we are activated by sensory input. A normal nervous system can respond to the bombardment of afferent stimuli. However, an individual with CNS dysfunction has difficulty coping with these demands. Fiorentino (1972) stated,

> "Though the nervous system has retained its ability to respond, the afferent inflow is short-circuited into the synaptic chains of the few typical, widespread, abnormal sensorimotor patterns of movement. Thus, motor dysfunction in movement seen in the cerebral palsied child is not a result of paralysis of muscles, but to abnormal coordination, to abnormal patterning of muscle throughout the affected parts."

Norton (1976) characterized the central nervous system as a series of "interacting functional units with a continual interplay among units and nuclei at different structural levels." If a unit is not functioning properly due to a lesion, the interrelation of units at all structured levels are disorganized.

The developing central nervous system has a "remarkable capacity to compensate for damage through its ability to form new connections during the formative period of maturation." (Harris, 1970) Sensory input with efferent feedback facilitates the reticular arousal system at midbrain level which functions to influence central organization, and ultimately establish new sensorimotor schemes (Norton, 1976). Piaget has defined schemes as new stimulus patterns resulting from an interaction of feedback through biological adaptation to the environment (Phillips, 1969). With development of schemes the central nervous system becomes increasingly more organized. "According to Hebb, that organization has its roots in the repetitive patterning of inputs. When patterned input first occurs, there is random activity within the system; but patterns that are initially random gradually become reliable representations . . ." (Phillips, 1969, p. 17).

Other researchers have also emphasized sensory integration, neurological organization, and developmental patterning. As early as the 1800's Edward Seguin developed a neurophysiological approach which emphasized CNS stimulation.

Probably the most controversial theory was developed by Doman and Delacato. They utilized the rationale of Temple Fay's Neuromuscular reflex therapy and related it to neurological organization (Cratty, 1979, p. 33). Delacato emphasized specific patterning of various locomotor tasks which in turn positively influenced various neurological centers. For severely handicapped individuals Delacato stressed comprehensive sensory stimulation as a key to rehabilitation (Moran, 1977). Margaret Rood also advocated a developmental approach. "She believed that motor patterns are developed from fundamental reflex patterns present at birth which are utilized and gradually modified through sensory stimuli" (Sherrill, 1981, p. 118). Karel and Berta Bobath (1966) based their theory on the development of the normal postural reflex mechanism which comprises the integration of all automatic equilibrium reactions while simultaneously inhibiting abnormal reflex patterns. More familiar to current theory and certainly not to be overlooked are the writings of A. Jean Ayres (1972). She has performed extensive research and her book, Sensory Integration and Learning Disorders, has been influential to many disciplines.

Researchers have demonstrated that proper neurodevelopmental patterning and sensory stimulation does affect positive change in severely multiple handicapped individuals with CNS dysfunction (Bobath, 1966; Norton, 1976; Moran, 1977).

> "Developmental in approach, sensory integration was designed to provide controlled sensory input that would improve the basic organization of central nervous system mechanisms and thereby enhance the child's adaptive and learning processes. Somatosensory, tactile, and particularly vestibular stimulation are provided through appropriate activities to enhance reticular and other subcortical neural organization" (Norton, 1976, p. 19).

Basically, psychomotor developmental skill improves as primitive patterns are inhibited and more complex reactions are facilitated. The use of the word 'skill' may seem awkward; however, Cratty (1964, p. 23) defines the facilitation of skill as, "some learning has taken place and that a smoothing or an integration of behavior has resulted."

For one to understand deficits of CNS dysfunction, a working knowledge of normal sequential motor development must be acquired. In the neonate, reflex and spontaneous reactions indicate the maturity of the CNS. With dysfunction one must understand that abnormal postural reflexes and patterns of incoordination interefere with attaining normal motor activity. Norton (1976, p. 65) stated that:

> "reactions and patterns of behavior approaching the normal are facilitated in treatment through special methods of handling. Such handling is designed to provide the sensations of normal movement and posutre on the basis of normalized muscle tone. Inhibitory handling is used to alter abnormal gross sensorimotor patterns throughout the body."

Finny (1974) established "key points" that one must understand when positioning and handling children with CNS dysfunction. The position and control of the head is the basis for all movement. With abnormal motor development, primitive reflexes such as assymetrical tonic neck and tonic labyrinthine are initiated by change in head position, causing abnormal extensor and flexor muscle tone (Fiorentino, 1976). Finney (1975, p. 51) also emphasized:

> "While learning to observe the child's abnormally coordinated patterns of posture and movement and their effect on the whole child, you must become sensitive to the varying changes of muscle tone under your hands, being able to feel the difference, for example, between an arm that feels stiff and resists movement and one that feels light and therefore can be moved actively by the child."

Adapted physical educators must be aware of contraindications for positioning and handling in order to facilitate appropriate motor responses.

As physical educators we know that we must have sensory input to have motor output. We know that to acquire motor proficiency in any skill we must practice that skill over and over, continually giving sensory stimulation to CNS pathways and receiving feedback through motor output. This basic concept of motor learning is easily understood when referring to locomotion, receipt and propulsion, visual motor control, and balance. However, the physical educator must adapt and apply these basic principles to activities appropriate for severely handicapped individuals. At a recent conference Sherrill (1982) stated,

> "Thus the adapted physical educator facilitates learning to whatever motor skill is needed--lifting the head from prone lying, rolling over, crawling, creeping, sitting, and changing from one position to another. Ball handling activities for the severely handicapped may be conceptualized as teaching object awareness, eliciting approach and avoidance reactions to objects and developing reach, grasp, hold, and release mechanisms."

Controlled sensory input of all modalities must be emphasized, allowing for improvement in central nervous system organization. Patterning and repetition of activities is essential to facilitate ongoing integrative neurological processes.

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CERTIFICATION IN ADAPTED/SPECIAL PHYSICAL EDUCATION: NATIONAL STATUS

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Several states have responded to the Public Law 94-142 physical education mandate by developing and implementing adapted/special physical education teacher certification plans. This specific personnel preparation provides handicapped students with professionally guided experiences in physical education and related activities. These certification programs have met with much success and employment opportunities indicate a great demand for these specialists. The purpose of this study was to determine an over-all status of certification in adapted physical education and to provide specific suggestions for initiation of state plans. Surveys were mailed to all special education and physical education state directors and members of the National Consortium on Physical Education and Recreation for the Handicapped. Results from a preliminary survey were used as a basis for devising the current and more in depth survey. A second purpose of the study was to establish a national channel of communication for adapted physical education professionals. The survey was designed to derive the original planning process for certification, competency-based or credit hour requirements, and terminology used to describe services and responsibilities. Suggestions for direction for initiation of state plans, advantages and disadvantages were discussed through a descriptive format.

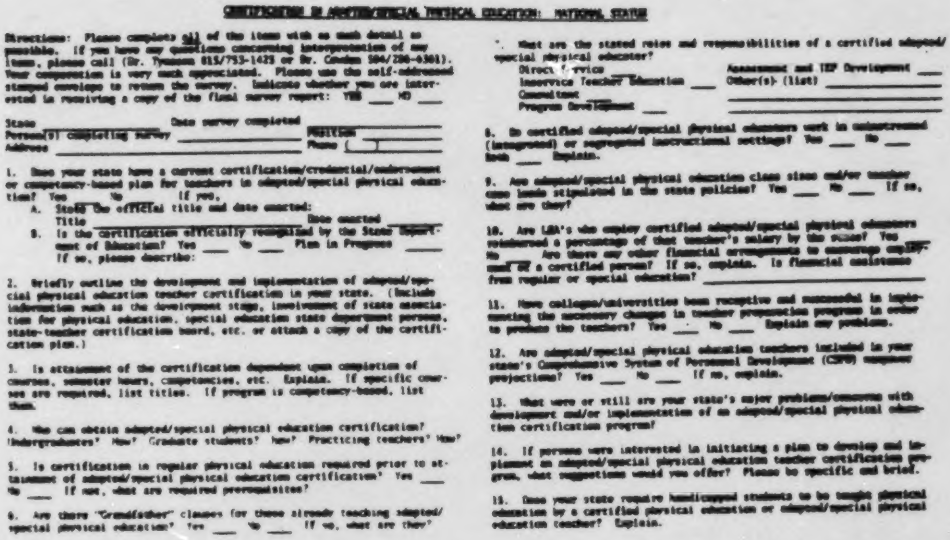
The importance of regular participation in professionally planned and implemented physical education by handicapped students has been long recognized. The inclusion of physical education as an instructional service in PL 94-142 created a further awareness of the importance of these opportunities for all handicapped students.

Several states have responded to the mandate of Public Law 94-142 and have implemented adapted/special physical education teacher certification plans. This specific personnel preparation provides opportunities for handicapped students to have professionally guided experiences in physical education and related activities. These certification programs have met with much success and employment opportunities indicate a great demand for these specialists.

The purpose of this study was threefold: 1) to determine a overall status of certification in adapted/special physical education; 2) to provide specific suggestions for initiation of state plans; and 3) to establish a national channel of communication for professionals interested in the discipline of adapted/special physical education.

Surveys were mailed during the Spring of 1982 to all special education and physical education state directors and members of the National Consortium on Physical Education and Recreation for the Handicapped (Table 1). Information was received, either by phone (9) or surveys (41), from all states. Some states were represented by either a physical education professional, a special education director or by a certification officer.

Table 1



CERTIFICATION IN ADAPTED/SPECIAL PHYSICAL EDUCATION: NATIONAL STATUS

Directions: Please complete all of the items with as much detail as possible. If you have any questions concerning interpretation of any items, please call (Dr. Tymeson 815/753-1425 or Dr. [illegible] 504/[illegible]). Your cooperation is very much appreciated. Please use the self-addressed stamped envelope to return the survey. Indicate whether you are interested in receiving a copy of the final survey report: YES ___ NO ___

State ______ Date survey completed ______
Person(s) completing survey ______ Position ______
Address ______ Phone ( ) ______

1. Does your state have a current certification/credential/endorsement or competency-based plan for teachers in adapted/special physical education? Yes ___ No ___ If yes,
   A. State the official title and date enacted:
   Title ______ Date enacted ______
   B. Is the certification officially recognized by the State Department of Education? Yes ___ No ___ Plan in Progress ___
   If so, please describe:

2. Briefly outline the development and implementation of adapted/special physical education teacher certification in your state. (Include information such as the development stage, involvement of state association for physical education, special education state department personnel, state-teacher certification board, etc. or attach a copy of the certification plan.)

3. Is attainment of the certification dependent upon completion of courses, semester hours, competencies, etc. Explain. If specific courses are required, list titles. If program is competency-based, list them.

4. Who can obtain adapted/special physical education certification? Undergraduates? How? Graduate students? How? Practicing teachers? How?

5. Is certification in regular physical education required prior to attainment of adapted/special physical education certification? Yes ___ No ___ If not, what are required prerequisites?

6. Are there "Grandfather" clauses for those already teaching adapted/special physical education? Yes ___ No ___ If so, what are they?

7. What are the stated roles and responsibilities of a certified adapted/special physical educator?
   Direct Service ___ Assessment and IEP Development ___
   Inservice Teacher Education ___ Other(s) (list) ______
   Consultant ___ ______
   Program Development ___ ______

8. Do certified adapted/special physical educators work in mainstreamed (integrated) or segregated instructional settings? Yes ___ No ___ Both ___ Explain.

9. Are adapted/special physical education class sizes and/or teacher case loads stipulated in the state policies? Yes ___ No ___ If so, what are they?

10. Are LEA's who employ certified adapted/special physical educators reimbursed a percentage of that teacher's salary by the state? Yes ___ No ___ Are there any other financial arrangements to encourage employment of a certified person? If so, explain. Is financial assistance from regular or special education? ______

11. Have colleges/universities been receptive and successful in implementing the necessary changes in teacher preparation programs in order to produce the teachers? Yes ___ No ___ Explain any problems.

12. Are adapted/special physical education teachers included in your state's Comprehensive System of Personnel Development (CSPD) manpower projections? Yes ___ No ___ If so, explain.

13. What were or still are your state's major problems/concerns with development and/or implementation of an adapted/special physical education certification program?

14. If persons were interested in initiating a plan to develop and implement an adapted/special physical education teacher certification program, what suggestions would you offer? Please be specific and brief.

15. Does your state require handicapped students to be taught physical education by a certified physical education or adapted/special physical education teacher? Explain.

Results of the survey (Table 2) indicated that eight states have some type of certification/endorsement/credential. Those states are Alabama, California, Georgia, Kansas, Louisiana, Michigan, Minnesota, and New Mexico. Each state has utilized either a competency-based or course requirement approach.

Eleven other states are actively involved in developing programs (have either submitted plans or are currently developing them): Massachusetts, Illinois, Missouri, Nebraska, North Carolina, Ohio, Texas, Nevada, Maryland, Kentucky and Virginia. Since the earlier and smaller version of this survey was completed during the Fall of 1981, three additional states have successfully reported progress in attaining certification. In addition, the following states have stated courses and/or competency "recommendations" for in-field employment: Colorado, Washington, D.C. and Wisconsin. Unfortunately, only 44% of the states indicate positive direction in providing specialized training in adapted physical education and have designated adapted physical education as a targeted priority for personnel preparation. Other state professionals responding to the survey indicate no direction toward a state plan.

Table 2

States Implementing Adapted Physical Education Plans

Certification, Endorsement Credential, In-Field Endorsement	Actively Involved	Courses and/or Competency "recommendations" for In-field Employment
Alabama in-field endorsement	Massachusetts	Colorado
California	Illinois	Washington, D. C.
Georgia	Missouri	Wisconsin (special skills license)
Kansas	Nebraska	
Louisiana	N. Carolina	
Michigan	Ohio	
Minnesota	Texas	
New Mexico	Nevada	
	Maryland	
	Kentucky	
	Virginia	

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Many individuals completing the survey made comments, "sometimes conflicting," regarding suggestions for initiating a state certification plan. The following information is offered to assist those professionals who are attempting to create change in the state level: 1) establish a standing committee or task force through state AAHPERD; 2) establish credibility with state department of education; 3) involve both the state department and AAHPERD professionals early; 4) avoid threatening regular physical educators, university and state department levels; 5) utilize AAHPERD Adapted Physical Education Guidelines to establish consistency from state to state; 6) identify scope and roles which allow the state education agency maximum flexibility; 7) locate and affiliate with advocates within state agencies; 8) begin with establishing a plan for graduate degree or practicing teachers; 9) establish state approved guidelines for program implementation in adapted physical education while pursuing issues of certification; 10) place special emphasis on inservice for school administrators and state personnel capable of initiating change; 11) it appears to be an advantage for the state plan to include "Grandfather" clauses, stipulate teacher case loads, and be funded through minimum teacher foundation state money.

A contact list has been developed for each state. This list is a basis for establishing a national channel of communication for professionals interested in implementing change in adapted and developmental physical education. (The lists are available by contacting either of the authors.) Communication appeared to be a problem in all states, among school administrators, state directors, university personnel and certification officials. Emphasis must be directed toward individuals who have the power to implement change and toward effective communication among disciplines.

THE DEVELOPMENTAL EFFECTS OF BEHAVIORAL DISORDERS ON GROSS MOTOR ABILITY

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Behavioral disorders do not imply a condition of physical retardation (Webb, 1972). Yet, students considered to be behaviorally disordered are generally 1-2 years delayed in gross motor ability when compared to their normal counterparts (Winnick, 1979). This comparison is limited developmentally however. A 12 year old behaviorally disordered student who is 2 years delayed may be more delayed than a 7 year old due to differences in growth rates at these periods in life. Information, therefore, has been needed to provide more exacting data about the motor ability of these students than we acquire from global statements commonly reported in adapted physical education literature.

Another important reason for measuring gross motor ability of these students across ages is to determine if a pattern of motor development exists in relationship to social and emotional behaviors. Two theories predominate professional thinking in th[illegible]a. One theory suggests permanence of early school maladjustment (Zax & Cowen, 1972; Brownbridge & Van Fleet, 1969; Stennet, 1966) while the other believes that there is a lack of permanence in maladaptive school behavior as one gets older (Mental Health Research Unit, 1964, 1967; Gavin, 1972). If similar developmental patterns were noticed in the motor domain, e.g., that motor ability improved with age, when compared to the norm, a relationship could be hypothesized between the motor and social/emotional domains. According to Keogh (1979), there is reason to believe that movement behavior (motor ability) can be adversely affected by personal-social behaviors (social-emotional).

Besides developmental problems in statements indicating that behaviorally disordered students are 1-2 years delayed, there is a problem in determining whether or not they are delayed in all gross motor areas when compared to the norm. Some research has been reported in which specific gross motor ability which required rhythm and attention to task were factors in poor performance by neurologically impaired individuals. However, no studies could be located which specifically analyzed these factors within behaviorally disordered individuals.

Therefore, the purpose of this study was to determine the developmental differences between behaviorally disordered and normal students in gross motor ability. In addition, this study attempted to analyze the differences in each specific gross motor item between these students.

Method

Sixty-three behaviorally disordered students, seven girls and fifty-six boys, were selected from special education programs in the Denver Colorado Public School District to participate in the project. They were from seven to twelve years of age and separated for analysis into the following age groups: a) seven year olds (n = 8), b) eight year olds (n = 16), c) nine year olds (n = 9), d) ten year olds (n = 18), e) eleven year olds (n = 11) and f) twelve year olds (n = 3). Each subject was administered the Hughes Gross Motor Assessment which is a valid and reliable test instrument to determine gross motor ability (hughes, 1979). Test items included these gross motor components: a) static balance, b) stride jump, c) tandem walking, d) hopping, e) skipping, f) target throw, g) yo-yo, h) ball handling skills of throwing, catching and dribbling/bouncing.

Results

A "t" test was used to determine differences between the total scores of behaviorally disordered students and normal students at each age group. Also, a "t" test was used to determine differences in each test item score between behaviorally disordered and normal students.

The seven, eight, nine and ten year old behaviorally disordered students scored significantly lower than their normal counterparts on the Hughes Gross Motor Assessment. However, the eleven and twelve year olds, while they scored slightly lower than their normal counterparts, did not score significantly lower.

Regarding test item differences between normal and behaviorally disordered students, a unique pattern emerged. Behaviorally disordered students scored significantly lower than the norm on static balance, stride jump, and dynamic balance abilities and scored lower but not significantly on skipping, hopping, aiming, and elementary ball skills. This pattern was consistent across ages except with the twelve year olds who scored the same as normal students on these items.

Discussion

Developmentally it was determined in this study that gross motor ability of behaviorally disordered students is significantly lower but improves to the level of the norm with age. While cause and effect cannot be determined, a pattern of motor development in behaviorally disordered children emerged similar to patterns of social/emotional development which suggest a lack of permanence in maladaptive behavior as one gets older. Subjects in this study, however, were more mildly behaviorally disordered and subjectively it was believed by the investigators that motor behavior of more severely disordered students would not fit this pattern.

With regard to individual test items of gross motor ability, behaviorally disordered students scored lower across all age groups but not significantly than the norm on items reflective of every dat activities that are more likely to be practiced in recess or physical education, e.g., throwing, catching, and dribbling. However, on items that were not usually practiced, that were more novel, required concentration and were rhythmical in nature, behaviorally disordered students scored significantly lower across all age groups than the norm. These items were: a)static balance, b) stride jump and c) dandem walking (dynamic balance). These observations parallel those with Poindexter (1969) who reported that emotionally disturbed children demonstrated difficulties in coordination, locomotor patterns, and static and dynamic balance. Also, these observations were similar to those reported by Stott (1966) who tested children who were neurologically impaired. He stated that activities which required concentration and which were rhythmical in nature were more difficult for children who had attention disorders as do many behaviorally disordered students.

An implication of this study is that it is erroneous to assume that behaviorally disordered students are simply behind 1 to 2 years than their normal counterparts in gross motor ability when, in fact, they may tend to be more like the norm as they become older. In addition, behaviorally disordered students may not be motorically behind normal students except in certain motor behaviors that are complex, rhythmical in nature, and not normally practiced in every day settings.

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RELIABLE ASSESSMENT OF MOTOR CHARACTERISTICS OF EXCEPTIONAL INDIVIDUALS: MEASUREMENT ISSUES AND STRATEGIES

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In order to make effective decisions about the proper provision of care and supervision of physically disabled persons, accurate assessments must be made of their physical capabilities. Tests developed in the past to make such assessments are typified by one of two broad categories of administrative format: (1) the collection of objectively-scored items and their subsequent interpretation through reference to normative standards; or (2) the collection of subjective ratings (often in the form of occurrence/nonoccurence judgments) by competent observers and their ocomparison to defined standards of appropriate (or expected) performance.

In recent years, the tenor of educational thinking, particularly in special education, has promoted particular interest in assessment procedures of the second type. These assessment procedures help identify particular motor performance capacities (or behavioral characteristics) that students do or do not possess. They are commonly referred to as "criterion-referenced tests." In the special education setting, these tests will often be comprised of subjectively gathered observational items, the observations being made by one or more raters. The question naturally arises of whether the observational assessments made can be considered reliable; that is, whether the motor or behavioral characteristics observed would be consistently observed if replicate measurements were made.

Background for Study

The present study was part of a large scale project conducted by the Cajon Valley Union School District to develop a consultant model of service delivery for handicapped children needing special service (Greaves, Note 1). One objective of this project was to develop a motor performance assessment instrument--the Cajon Valley Motor Assessment Instrument (CVMAI)--for severely and physically handicapped children. Some 76 separate items were originally developed for this test, each item comprising between one and three observational judgments by a rater of whether a child could or could not complete a specified motor act in a defined way. This study, therefore, sought to devise statistical methods appropriate to help decide whether particular observational test items should be retained or excluded from the developing instrument. Specifically, it was concerned with devising methods to determine whether the specific motor performances included as items of the instrument could be reliably (i.e., consistently) observed.

Several factors were expected to influence the ratings of motor performance: (1) the rater; different raters may presumably be more or less effective in making particular observational judgments; (3) the subject; subjects' performances would vary from trial to trial and, even more likely, from day to day. The relative effects of each of these factors in disturbing the reliability of the individual items of the instrument were of interest so that inadequate items could be eliminated or properly amended.

Methods

Generalizability analysis (Cronbach, Gleser, Nanda & Rajaratnan, 1972) has been posited as a powerful and flexible means of examining the reliability of measures obtained in many measurement settings. Since its initial development, it has been refined and extended in its applicability by many investigators (Brannan & Kane, 1977; Cardinet, Tourneur & Allal, 1976; Cardinet, Tourneur & Allal, 1981; Jones, 1977). While some researchers have recommended its use for measures obtained on all four of Stephens' scales of measurement (Berk, 1979), others have argued that it is more properly restricted to only some of these scales (Cicchetti & Sparrow, 1981). Resolution of these competing opinions is not yet apparent.

This study modified the methods of generalizability theory to help make decisions about whether particular observational test items should be retained or excluded from a developing test instrument.

Study Design

Twenty-eight handicapped children were videotaped performing each of the items they were capable of performing on the developmental version of the CVMAI. Fourteen of the children were retested and again ("repeat") videotaped approximately one week later. Twenty-nine raters viewed the videotape films. Fourteen raters viewed the tapes for each of 14 children, and again viewed the SAME tapes within a few days (Data Set 1). A separate 15 raters viewed tapes of the other 14 children and within a few days viewed the REPEAT films of each of the same subjects (Data Set 2). This design allowed each of the several factors expected to influence the ratings of motor performance to be assessed.

Analytical Model

Computer programs were written to analyze the two Data Sets by a generalizability analysis. For both sets, subjects formed the fact of differentiation, raters and occasions the faces of instrumentation. Analyses of both sets allowed estimation of the magnitude of sources of variation which caused inconsistency in rating scores from rater to rater, and occasion to occasion. Analysis of Set 2 scores enabled the effect of day to day changes in child performance to be incorporated into occasion to occasion variability; analysis of Set 1 scores allowed assessment of within-rater consistency alone.

Results

Study investigators were alerted to inadequate reliability of about 25% of the items. These items were then carefully scrutinized to suggest methods of improving their consistency characteristics. It was found that the major source of inconsistency for many items occurred from random rather than "effect" sources. This finding led to a recommendation that thorough feedback-oriented training be given to raters. Nevertheless, the general level of item reliability was found to be fairly high.

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INCIDENCE OF POSTURAL DEVIATIONS IN OBESE GIRLS

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An association between postural deviations and obesity has long been assumed but the precise relationship between these anomalies is still unclear. Literature is scarce regarding the effects of carrying excess body fat on the development of posture. Several researchers have alluded to the relationship between obesity and specific divergencies. Brewer (1979) has reported increases in the normal lumbar lordosis of obese persons, due to the asymmetrical loads imposed by abnormal abdominal protuberances.

The weight bearing regions of the obese body are also susceptible to deformity during the developmental years. Asher (1975) has noted that children over seven years of age with genu valgum are frequently overweight. In the nonobese child, this condition has usually corrected itself by this age. Other investigators have suggested a relationship between obesity and the development of flexible pes planus (Sherrill, 1981; Crowe, Auxter & Pyfer, 1981).

The purpose of the present investigation was to determine the incidence of postural deviations in varying degrees of body fat of obese girls.

Method

Subjects

The subjects of this study were 112 females, ages 10-19, from predominantly white, middle to upperclass families in the Southwestern United States. All subjects exhibited an estimated percent body fat greater than 25%. Percent body fat values ranged from 25% to 67% with a mean of 41%. Values were estimated from skinfold measures taken at four sites (biceps, triceps, suprailiac and subscapular) with a Lange caliper, calibrated to exert 10 g/mm^2 pressure.

Instrumentation

To determine the occurrence of ten postural deviations, subjects were photographed from anterior, posterior and lateral standing positions behind a two-inch grid posture screen. Subjects wore swim suits to allow for observations of boney landmarks critical for determining postural deviations. Using a black grease pencil, subjects were marked at a point one and a half inches in front of the laterial malleolus, in order to establish a plumb line in the lateral view. An additional mark was made at the acromion process of the shoulder to enable a more accurate observation of forward and backward deviations. To determine the presence of postural deviations in the lateral standing position, a plumb line was drawn on the photograph, beginning at the mark anterior to the lateral malleolus and extending parallel to the vertical lines of the posture screen. The photographs were then systematically examined to determine the degree of genu recurvatum, ptosis, kyphosis, forward shoulders and forward head. In the anterior and posterior views, the plumb line was drawn from a point equidistant from the medial malleoli and extended vertically, bisecting the body. Forefoot pronation, genu valgum and genu varum were examined from these positions. Lordosis was determined by measuring the distance in centimeters to a vertical line drawn between the thoracic and sacral apices. Lordosis was indicated when the distance exceeded four dentimeters (Bleck, 1979). The tenth deviation, pes planus, was assessed using the Feiss line method (Wherrill, 1981).

Results

Subjects averaged four postural deviations each. The results yielded the following percent incidence of each deviation for all subjects: forward head, 54.5%; forward shoulders, 8%; kyphosis, 6.3%; lordosis (>4 cm.), 46.4%; ptosis, 98.2%; genu valgum, 66%; genu varum, 5.4%; genu recurvatum, 41%; forefoot pronation, 23.2%; and pes planus, 21.4%. When categorized according to degree of percent body fat, the results indicated a step-wise increase in the frequency of genu valgum, genu recurvatum, and forefoot pronation (see Table 1).

The incidence of postural deviations in the weight bearing regions (i.e., genu valgum, pes planus) was considerably greater when compared to non-obese girls of the same age (see Tables 2 & 3).

Table 1

Percent Occurrence of Postural Deviations for
Three Body Fat Categories

	Percent Body Fat Category			Mean
	(21)[a]	(51)	(40)	(112)
Deviation	25-34	35-44	45-70	41
Forward Head	62	57	48	54.5
Forward Shoulder	5	12	5	8
Kyphosis	18	3.9	8	6.3
Lordosis >4 cm.	62	65	58	46.4
Ptosis	100	96	100	98.2
Genu Valgum	48	67	75	66
Genu Varum	14	3.9	2.5	5.4
Genu Recurvatum	19	43	50	41
Forefoot Pronation	19	24	25	23.2
Pes Planus	19	71	13	21.4

Table 2

Percent Incidence of Genu Valgum
Obese vs. Non-Obese Girls

	(5)[a]	(6)	(9)	(17)	(12)
	Age				
	10	11	12	13	14
Obese	100	67	69	63	86
Non-Obese (Asher, 1975)	12	9	11	7	7

[a] Numbers in parentheses indicate numbers of subjects.

Table 3

Percent Incidence of Pes Planus
Obese vs. Non-Obese Girls

	(2)[a]	(22)	(38)	(7)	(2)	(3)	
	Age						
	10	11	12	13	14	15	16
Obese	40	22	38	26	14	18	27
Non-Obese (Asher, 1975)	3	1	2	4	8	2	9

[a] Numbers in parentheses indicate numbers of subjects.

Discussion

Although major diseases related to obesity, such as hypertension, diabetes, and heart disease, have been studied in some detail, there exists little quantitative information regarding other aspects of morbidity important to overweight individuals. The present study attempted to provide information concerning the incidence of postural deviations in obese girls. The data indicate concomitant posture problems associated with obesity in growing girls and point out the necessity for remediation before they become firmly established. A weight loss program accompanied by exercises to correct muscular imbalances is warranted for obese girls evidencing postural anomalies. Exceptional children who are prone to obesity (e.g., Down's Syndrome) should also be monitored through routine posture screening on an annual basis. Special attention should be given to alignment in the weight bearing regions (foot and knee). Deviations persisting after the early elementary years indicates the need for an exercise regimen and/or medical referral.

As a guide for both prevention and treatment of postural anomalies, the results of this study provide impetus for routine posture screening of female endomorphs.

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NEUROLOGICAL ORGANIZATION AND DEVELOPMENTAL PATTERNING: SEQUENTIAL PROGRAM IMPLICATIONS FOR THE SEVERELY HANDICAPPED (PART II)

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The concept of sequential motor development is based on the principle that all persons, regardless of handicap or developmental level, can systematically progress in motor development. Studies in child development have clearly established the sequential development of the child as a step-by-step process, with motor development forming the base of later, higher developmental processes (Gessell, Ilg, & Bullis, 1949; Getman, 1962; Kephart, 1960). Studies are found in the literature stressing the importance of the developmental sequence and its relationship to learning effectiveness and curriculum development (Lockwood, 1978; Oaks, 1974; Rapp, 1975). As Belgau (1966) points out, children are not born with the motor base to learning, but instead it is developed as they learn to use their body motorically. Therefore, since these motor patterns and their accompanying concepts are learned and provide a base for further development, it seems apparent to provide individuals the opportunity to experience activities that will help them along the developmental pathway.

Most of the existing motor development programs consist of a curriculum that is geared developmentally too high or too low to meet the needs of individuals at the extreme ends of the developmental continuum. Severe motor deficits and developmental gaps make the instructional process a difficult one. The complexity of variables within individuals and groups classified as severely handicapped necessitates the provision of a curriculum that is diverse enough to generalize across group needs and at the same time independently meet individual needs. The methods and procedures that follow provide a systematic, prescriptive and practical approach to individualized sequential motor development for severely handicapped populations.

Curriculum Development

Curriculum development is dependent upon the selection of general developmental sequences in the areas of balance, locomotion, and receipt and propulsion. Developmental sequential theory, as it relates to motor development and conceptual learning, is explained by Kephart (1960). A child learns to maintain balance and out of this experience develops a reference point, the center of gravity, where the three planes of the body intersect. A spatial concept of up, down, in front of, behind, and of each side is developed. Therefore, balance acquisition is of prime importance for setting the stage for learning about spatial relationships. Locomotion provides a primary means of exploring spatial concepts. In the developmental sequence, a child learns to roll, crawl, creep, walk, and then higher locomotor skills emerge. Learning to propel and receive objects teaches the use of both sides of the body in opposition and the judging of distance. Therefore, balance, locomotion, and receipt and propulsion are identified as the primary areas of curriculum development.

Standard sets of general developmental sequences of gross motor activities should be used as a foundation for the formulation of individualized motor development programs, regardless of the specific populations involved. The basic sequences do not change from population to population, though assessment will place individuals at different levels in the sequences. In some instances the sequence will have to be geared lower on the developmental continuum to meet specific individualized needs. Likewise, higher level activities may be necessary in order to meet the needs of an individual or group more developmentally advanced. The range of abilities within classification guidelines is staggering. However, by using the general sequences, one student could be working on the skill of grasp and release while another individual on a higher motor developmental level is working on the skills of catching and kicking within the same receipt and propulsion sequence. This individualization is the essence of this approach to curriculum.

Program Implementation

Program implementation is based on the application of developmental patterning techniques. The teaching strategy of developmental patterning is dependent on the repetition of activities that are sequential in nature and prerequisites to the desired goal (Lockwood, 1978). According to neurological organization theory (Delacato, 1963), which rests on the premise that normal development results in neurological development, repetition of a motor pattern will open neuropathways. If coupled with the development of generalized skills using that motor pattern, a motor base is developed. To illustrate the concept of generalization (Kephart, 1960), the motor pattern of an underhand throw can be generalized to include such activities as bowling, horseshoes, target tosses and softball pitching.

In the proposed teaching strategy, each skill activity in an individual's program in each of the areas (balance, locomotion, and receipt and propulsion) should have remedial activities which not only aid in the learning of each skill, but also provide for generalization. Application of passive shaping and behavior management techniques may prove valuable in the elicitation of desired responses from some individuals. Curriculum decision-making, which selects remedial activities for each targeted goal, employs applied behavioral analysis techniques (Lockwood, 1978). For instance, the skill of jumping is a difficult one to teach. A teacher may have to include several prerequisite activities in order to develop a two-foot jump. These activities would be interventions in applied behavioral analysis design.

Standardized Data Collection

There is, at present, very little objective data on procedures and curriculum strategies for working with the severely handicapped in motor development. Standardization of the number of repetitions per set, distances and equipment would enhance objectivity in the comparison of research data. For dynamic balance and locomotor activities, a set should consist of continued performance for a distance of 16 feet (two eight-foot mats). For receipt and propulsion activities, distances to be used should be 1, 3, 5, 10, 15 and 30 feet, a set should consist of 10 repetitions and standard equipment should be bean bags, whiffle balls, racquet balls, tennis balls, yarn balls and ping-pong paddles.

This methodology provides for standardized data collection in evaluating the acquisition of motor skills. Standardization provides educators and researchers objective data for comparative study of the sequencing of motor skills and the refinement of an objective teaching methodology, enabling individualization of motor development programs within a universal, standard framework.

Conclusions

It is recommended that sequential programming, developmental patterning and standardized data collection be implemented in motor development programs for the severely handicapped. This methodology enables the teacher to provide opportunity for each student, regardless of developmental level, to acquire generalized motor skills and progress along the developmental continuum. Professionals will have a means of gathering scientific, objective data necessary for further analysis and synthesis of the processes involved in the developmental sequence. Perhaps, then, providing effective individualized physical education programs can become a reality instead of an awesome responsibility.

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STANDARDIZED CRITERION-REFERENCED TEST
IN FUNDAMENTAL MOTOR SKILLS
AND PHYSICAL FITNESS

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Functions of the Test

1. Screening for identification and referral of students deficient in fundamental motor skills and physical fitness.
2. Instructional diagnosis for placement and programming in physical education.
3. Evaluation for monitoring student progress and revising educational programs.

Appropriate Student Population

This test was standardized on students within the age range of 3-12 years. The stratified sample consisted of males (52%) and females (48%), students in the regular education setting (normal, learning disabled and emotionally impaired) educable mentally impaired and trainable mentally impaired students. The sample was representative of whites (82%), blacks (15%), and other minority groups (3%). The standardization sample was reflective of the white collar and blue collar labor force. Students in urban, suburban and rural schools in Michigan were sampled.

Procedures for the Seclection of Fundamental Motor Skills and Physical Fitness Skills

The reason for selecting fundamental motor and physical fitness skills was based on the following definition of physical education in Public Law 94-142: "Physical and motor fitness, fundamental motor skills and patterns, skills in aquatics, dance and individual and group games and sports." The selection of specific skills within the fundamental motor skill area was based on three criteria:

1. The skill had to be listed as a minimal performance objective in physical education in the State of Michigan within the object control or locomotor skill area (Michigan Department of Education, 1979 draft).
2. The skill had to be a program objective in the I CAN Objective-Based Instructional System within the locomotor or object control skill area (Wessel, 1976).
3. The skill had to be supported as an important fundamental motor skill by at least one of the selected literature sources reviewed.

These three criteria represented an effort to select skills that were relevant to the physical education content taught in most Michigan school districts.

Physical fitness skills were selected by reviewing currently popular assessment instruments and selecting those that could be measured in a school setting with minimal equipment and represent common physical fitness parameters.

Test Item Development

The following characteristics of a well-designed, criterion-referenced test item were used as a guide in developing the test items:

1. An established descriptive scheme in the form of an amplified behavioral objective.
2. A sufficiently limited focus on these behaviors that are judged the most relevant.
3. The use of observable behaviors which will impact on their reliable measurement.

A set process was followed in developing the criteria for the qualitative (criterion) level of each test item:

1. List the most common qualitative components derived from a review of factor analysis studies, qualitative analysis and literature review for each of the skills that were selected for inclusion in the test.
2. Have three content experts rate each component on the following criteria: (a) can the component be reliably observed by a teacher in an educational setting and (b) is the component with the research that describes a quality performance.
3. Delete those components that receive negative ratings by two or more content experts on any of the criteria.

A major task in the selection or deletion of components for the criterion level of each skill was to try to come to a compromise between what can be reliably observed, what a qualitative pattern is and administrative usability (the time necessary to assess a student). One of the consistent complaints in the field is that motor assessment takes too much time.

Those components that survived the selection process were placed in the amplified behavioral objective for each test item (see Appendix A for complete list). The following stimulus attributes were incorporated into each test item developed from the test's descriptive scheme (amplified objective):

1. Preceded by a demonstration and verbal request.
2. Two practice trials where no feedback or instruction is provided to assure the student understands what to do.
3. One additional demonstration is provided where the student does not know what to do on the first trial.
4. During the students' performance, any qualitative verbal prompts can be used, i.e., "use one hand".
5. Instructions are provided in the student's native language or mode of communication, e.g., sign language.

Directions for Administration and Scoring

General Directions

1. Before testing, read the entire test to acquaint yourself with each item, its equipment requirements, directions and criteria.
2. Assemble all materials prior to testing. Mark off the appropriate distance.

Materials

Colored tape/chalk/marking devices
Mat or carpet
Stopwatch
3-4 inch ball
Target 5 x 5 feet

Bench or flat vertical surface
6-8 inch playground ball
8-10 inch playground ball
4-6 inch lightweight ball
Plastic bat
Batting tee/traffic cone/suspended ball
4 chairs or cones

Distances to Mark Off

50 feet
40 feet
30 feet
15 feet
30 x 50 feet of clear space

3. The test administrator may want to set up stations to facilitate moving students from one item to the next. Start at any point in the test battery; however, continue according to the specified order. The test was designed to alternate strenuous with less strenuous items.
4. Although the test administrator should assess each student individually, it may be easier and more economical to test 2-3 students together. As each student is assessed on an item, the other students are allowed rest periods. If testing students in a group, alternate the sequence of individuals so one student does not always go first or last.
5. The average administration time to assess one student on all 16 items is 25 minutes. This will obviously vary according to the age and performance level of the student.

Specific Directions

1. Each item should be preceded by a verbal cue and a demonstration of the skill according to all of the stated criteria in each item.
2. Practice trials (2) may be given to assure that the student understands what to do. If the student does not perform to criterion during the practice trials, verbal cueing and one additional demonstration may be given to correct errors.
3. Verbal prompts may be used throughout the student's performance. Use simple verbal instructions, e.g., "Bounce the ball," "Use one hand." Instructions should be given in the student's native language. If the student is accustomed to nonverbal communication, e.g., sign language, bliss symbols), directions should be given accordingly (see Appendix B for specific suggestions to aid in the reliable assessment of each item).

Scoring

The scoring grid would appear as such:

OBJECTIVE	EQUIPMENT	DIRECTIONS	CRITERIA
BOUNCE C R A O	-one 8-10 inch playground ball -hard surface (floor, pavement)	Instruct the student to release the ball and then bounce (dribble) it in place.	-contact ball between thigh and waist with fingers of one hand (push, not slap) -maintain a stable, stationary position -bounce ball 5 consecutive trials

There are four letters that can be circled to describe the student's response. Circle the letter that best describes the individual's response.

C - Student completes the item according to all the stated criteria. Any quantitative criteria stating "consecutive trials" requires performance of all qualitative criteria the stated number of times.

R - Student responds according to at least one of the criteria, but not all of the stated criteria (lacks quantitative or qualitative aspects).

A - Student needs some type of physical assistance to respond such as manipulating the student, guiding a student's hand or tapping of student's limb to achieve at least one of the stated criteria.

O - The student cannot achieve a minimum of one stated criteria even with assistance, responds inappropriately or refuses to respond.

Sample Item: "Bounce A Ball"

The materials needed are an 8-10 inch playground ball and a hard surface (floor, pavement) for the student to bounce the ball on. Ask the student to bounce (dribble) the ball. Demonstrate the skill according to the stated criteria. Observe the student to make sure he/she performs the skill the specified number of repetitions or the specified distance. Then, circle the letter on the score sheet that best describes the student's performance.

C - Criterion Level: The student performs the skill in accordance with all the stated criteria:

- contact ball between thigh and waist with fingers of one hand (push, not slap).
- maintain stable stationary position.
- bounce ball 5 consecutive times.

R - Rudimentary Level: The student performs the skill without assistance but not in accordance with all the stated criteria. There must be at least one observable qualitative or quantitative aspect. Examples for "bounce":

- slaps ball with hand; or
- uses two hands to bounce; or
- travels while bouncing; or
- doesn't bounce 5 consecutive times.

A - Assistance Level: The student performs the skill at the rudimentary level with some physical prompting. Example for "bounce":

- the teacher holds the student's hand(s) and guides him/her through the bouncing action.

O - Other Response Level: The student does not achieve a minimum of one criterion even with physical assistance, refuses to respond, or responds inappropriately. Examples for "bounce":

- after the student is given a demonstration, he/she throws the ball away.
- the student releases ball and chases after it as it bounces, attempting to hit it, but without success. Student resists assistance of instructor.

SUMMARY SHEET

A Standardized Criterion-Referenced
Test In Fundamental Motor Skills and
Physical Fitness
TEST MANUAL

Name____________________________ Student Classification________________
Sex ____________________________ Test Date________________________________
Age__________ Test Administrator____

Objective	Initial	Final	Objective	Initial	Final
Run	C R A O	C R A O	Catch	C R A O	C R A O
Gallop	C R A O	C R A O	Kick	C R A O	C R A O
Hop	C R A O	C R A O	Overhand Throw	C R A O	C R A O
Leap	C R A O	C R A O	Two-Hand Sidearm Strike	C R A O	C R A O
Horizontal Jump	C R A O	C R A O	Sit-ups	C R A O	C R A O
Skip	C R A O	C R A O	Sit and Reach	C R A O	C R A O
Slide	C R A O	C R A C	Push-ups	C R A O	C R A O
Stationary Bounce	C R A O	C R A O	Walk/Run	C R A O	C R A O

SCORING KEY

C - Performs to criterion level as specified in description.
R - Performs skill, but lacks some quantative or qualitative aspects.
A - Requires some physical assistance.
O - No response or inappropriate.

Objective	Equipment	Directions	Criteria						
Run C R A O	50 feet of clear space; colored tape: chalk or other marking device	Mark off a starting line. Mark off a finishing line 50 feet away. Instruct student to "run fast" from one line to the other.	1-Brief period where both feet are off the ground 2-Arms in opposition to legs, elbows bent 3-Foot placement near or on a line (not flat footed) 4-Non-support leg bent approximately 90 degrees (close to buttocks)						
Gallop C R A O	A minimum of 30 feet of clear space	Ask student to gallop leading with one foot and then the other.	1-A step forward with the lead foot followed by a step with trailing foot to a position adjacent to or behind the lead foot 2-Brief period where both feet are off the ground 3-Arms bent and lifted to waist level 4-Able to use either foot as lead leg						
Hop C R A O	A minimum of 10 feet of clear space	Ask student to hop 3 times, first on one foot and then on the other.	1-Foot of non-support leg is bent and carried in back of the body 2-Non-support leg swings in pendular fashion to produce force 3-Arms bent at elbows and swing forward on take off 4-Able to hop on either foot						
Leap C R A O	A minimum of 50 feet of clear space	Ask student to leap. Tell him/her to take large steps leaping from one foot to the other.	1-Take off on one foot and land on the opposite foot 2-A period where both feet are off the ground (longer than running) 3-Forward reach with arm opposite the lead foot						

Objective	Equipment	Directions	Criteria						
Horizontal Jump C R A O	10 feet of clear space; tape or other marking devices	Mark off a starting line on floor, mat, or carpet. Have student start behind the line. Tell student to "jump far"	1-Preparatpry movement includes flexion of both knees with arms extended behind body						
			2-Arms extend forcefully forward and upward, reaching full extension above head						
			3-Take off and land on both feet						
			4-Arms are brought downward during landing						
Skip C R A O	A minimum of 30 feet of	Ask student to skip. Emphasize the Step-hop.	1-A rhythmical repetition of the step-hop on alternate feet						
			2-Foot of non-support leg carried near surface during hop						
			3-Arms alternately moving in opposition to legs at about waist level						
Slide C R A O	A minimum of 30 feet of clear space; colored tape or other marking device	Mark off a straight line. Ask student to do a slide 3 times to each side, staying on the line.	1-Body turned sideways to desired direction of travel						
			2-A step sideways followed by a slide of the trailing foot next to the lead foot						
			3-A short period where both feet are off the ground						
			4-Able to slide to the right and left side -						
~~Two~~-Hand Strike C R A O	4-6 inch light-weight ball; batting tee; plastic bat; traffic cone or ball suspended on rope	Place the ball on the batting tee. Give student the bat and ask him/her to "hit the ball far"	1-Dominant hand grips bat above non-dominant hand						
			2-Nondominant side of body faces tosser						
			3-Hip and spine rotation						
			4-Weight is transfered by stepping with front foot						

Objective	Equipment	Directions	Criteria						
Stationary Bounce C R A O	8-10 inch playground ball; hard, falt surface (floor, pavement)	Ask student to bounce ball as many times as he/she can, using one hand.	1-Contact ball with one hand at about hip height						
			2-Pushes ball with fingers (not a slap)						
			3-Ball contacts floor in front of (or to the outside of) foot on the side of the hand being used						
Catch C R A O	6-8 inch playground ball; 20 feet of clear space tape or other marking device	Mark off 2 lines 15 feet apart. Student stands on one line and the tosser on the other. Toss the ball underhand directly to student with a slight arc and tell him/her to "catch it with your hands". Only count those tosses that are between student's shoulders and waist.	1-Preparation phase where elbows are flexed and hands are in front of the body						
			2-Arms extend in preparation for ball contact						
			3-Ball is caught and controlled by hands only						
			4-Elbows bend to absorb force						
Kick C R A O	8-10 inch playground ball; 30 feet clear space; tape or other marking device	Mark off a line 30 feet away from a wall. Place the ball on the line and ask student to kick ball toward the wall.	1-Rapid approach to ball						
			2-The trunk is inclined backward during ball contact						
			3-Forward swing of the arm opposite kicking leg						
			4-Follow-through by hopping on non-kicking foot						
Overhand Throw C R A O	3-4 inch ball; target 5x5 feet; wall; 40 of clear space tape for marking	Place a target on the wall. Mark off a starting line 30 feet from wall. Ask student to throw ball "hard" at the target.	1-A downward arc of the throwing arm initiates the windup						
			2-Rotation of hip and spine						
			3-Weight transfer to foot opposite the throwing arm						
			4-Follow-through beyond ball release diagonally across body toward side opposite throwing arm						

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Objective	Equipment	Directions	Criteria						
Sit-ups (Abdominal strength) C R A O	Mat or carpet; stopwatch	Instruct student that on the signal "go" she/he should do 3 sit-ups.	1-Lie on back, knees bent, feet flat on floor, arms crossed over chest 2-Curl up to touch elbows to thighs 3-Return to lying position 4-3 consecutive sit-ups						
Sit and Reach (Trunk/leg Flexibility) C R A O	Bench or flat vertical surface (wall)	Place a bench on its side. Sitting with legs straight and feet flat against bench, ask student to touch his/her toes without bending the knees.	1-Assume a sitting position with legs together and knees straight 2-Bend and reach forward to feet with one hand on top of the other keeping legs straight 3-Hold for 3 seconds 4-3 consecutive reaches						
Push-ups (Arm/ Shoulder strength) C R A O	A flat surface	Ask student to do 3 push-ups. Delete this item for students under 8 years of age.	1-Assume prone position parallel to floor, toes on floor, hands directly under shoulders 2-Keep body parallel to floor while lowering body to 1-3 inches above floor 3-Raise body to starting position 4-3 consecutive push-ups						
Walk/Run (Cardio-respiratory endurance) C R A O	A minimum of 30x50 feet of clear space; 4 chairs or cones; stopwatch or clock	Mark off a clear oval space by placing chairs or cones at 4 corners of a gym. If available, use round track. Ask student to run around the outside of the chairs. Tell student to run slowly and as long as he/she can. If student tires, he/she may walk. Delete for students under 8 years of age	1-Run/walk continuously 2-5 consecutive minutes						

Directions for Using Student Profiles

1. Locate the appropriate student profile according to the age of the student (3-12 years).
2. Transfer student's test results onto the student profile.
   2.1 Determine which student classification is appropriate (normal, educable mentally impaired, or trainable mentally impaired). Determine the student's gender for the overhand throw and two-hand strike (M-F).

   2.2 Using the student's test score sheet, transfer the item scores onto the student profile by circling the appropriate letter for each item.

   2.3 Convert each of the item scores into a numerical form using the following scale: C = 4, R = 3, A = 2, O = 1.

   2.4 Calculate the locomotor subtotal by adding up the first seven test items. Circle the subtotal score on the profile closest to that of the student.

   2.5 Calculate the object control subtotal by adding up test items 8-12. Circle the score on the student profile closest to that of the student.

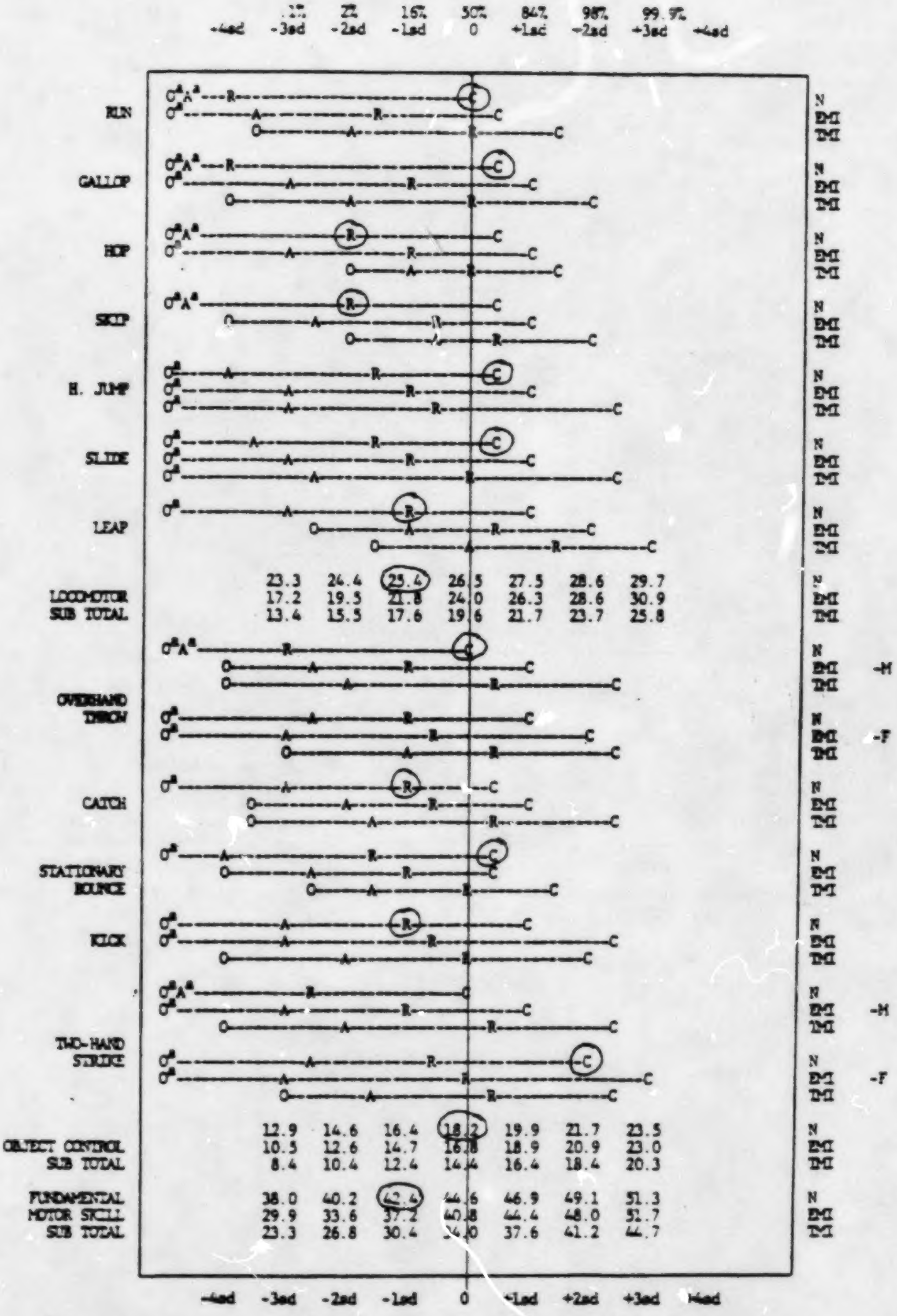
   2.6 Calculate the fundamental motor skill subtotal by adding the student's locomotor subtotal and object control subtotal. Circle the score on the profile closest to that of the student.

   2.7 For students 8-12 years of age, calculate the physical fitness subtotal by adding up test items 13-16. Circle the score on the profile closest to that of the student.

   2.8 For students 8-12 years of age, calculate the total test score by adding up the three subtotal scores. Circle the score on the profile closest to that of the student.
3. For ease of viewing the student profile and making decisions about the student's performance, it is recommended that a light line be drawn between the zero at the top of the profile and the zero at the bottom. This line will represent the average performance in which to make normative interpretations.

The completed profile should look something like the following example of a 9-year-old normal male student.

AGE 9



[a] This performance level falls above or below the mean by more than 4 standard deviations

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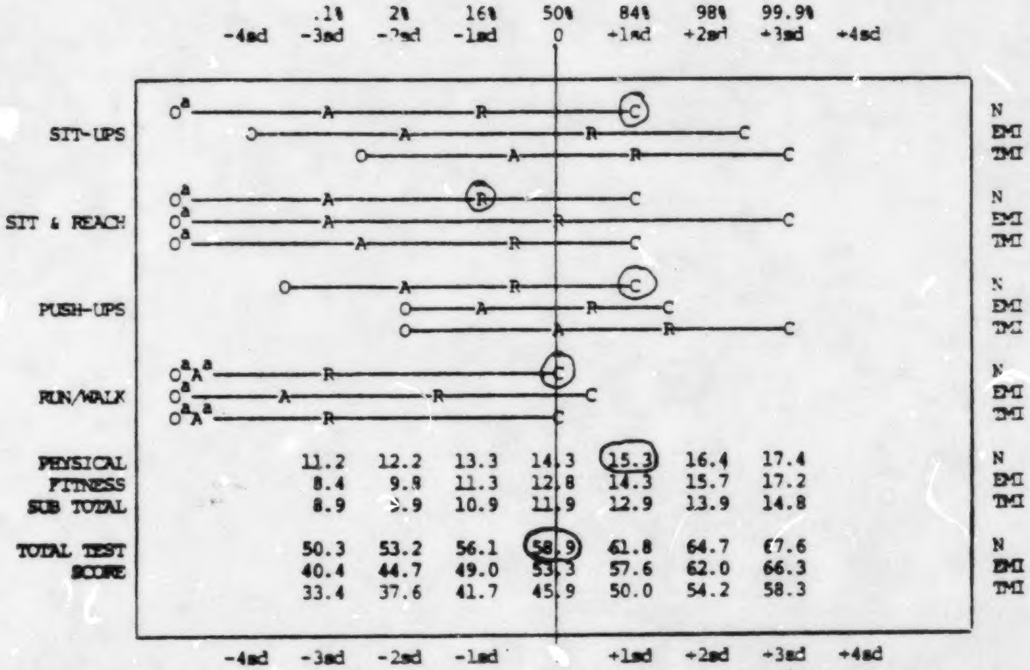
AGE 9



[a]This performance level falls above or below the mean by more than 4 standard deviations

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